PMOC COMPREHENSIVE MONTHLY REPORT

East Side Access (MTACC-ESA) Project
Metropolitan Transportation Authority
New York, New York

Report Period March 1 to March 31, 2017

PMOC Contract No. DTFT60D1400017

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Urban Engineers of New York, D.P.C., 2 Penn Plaza, Suite 1103, New York, NY 10121
PMOC Lead: E. Williamson, 212-736-9100; ejwilliamson@urbanengineers.com
Length of time on project: Ten years on project for Urban Engineers

TABLE OF CONTENTS

EAST SIDE ACCESS PROJECT (ESA)

THIRD PARTY DISCLAIMER....1

REPORT FORMAT AND FOCUS....1

MONITORING REPORT....1

EXECUTIVE SUMMARY....1

ELPEP COMPLIANCE SUMMARY....11

1.0 GRANTEE'S CAPABILITIES AND APPROACH....14

1.1 MANAGEMENT CAPACITY AND CAPABILITY....14

1.2 PROJECT MANAGEMENT PLAN....14

1.3 PROJECT CONTROLS....15

1.4 FEDERAL REQUIREMENTS....16

1.5 SAFETY AND SECURITY....1

1.6 PROJECT QUALITY....17

1.7 STAKEHOLDER MANAGEMENT....4

1.8 LOCAL FUNDING....1

1.9 PROJECT RISK MONITORING AND MITIGATION....1

2.0 PROJECT SCOPE....2

2.1 ENGINEERING/DESIGN AND CONSTRUCTION PHASE SERVICES....2

2.2 PROCUREMENT....1

2.3 CONSTRUCTION....3

2.4 OPERATIONAL READINESS....1

2.5 VEHICLES....1

2.6 PROPERTY ACQUISITION AND REAL ESTATE....43

2.7 COMMUNITY RELATIONS....44

3.0 PROJECT MANAGEMENT PLAN AND SUB PLANS....45

3.1 PMP SUB-PLANS....45

3.2 PROJECT PROCEDURES....4

4.0 PROJECT SCHEDULE....5

4.1 INTEGRATED PROJECT SCHEDULE....5

4.2 180-DAY LOOK-AHEAD OF IMPORTANT ACTIVITIES....50

4.3 CRITICAL PATH ACTIVITIES....51

4.4 CS179 SYSTEMS PACKAGE 1-FACILITIES SYSTEM....55

5.0 PROJECT COST....15

5.1 BUDGET/COST....15

5.2 PROJECT COST MANAGEMENT AND CONTROL 16
5.3 CHANGE ORDERS 59
5.4 PROJECT FUNDING 18
5.5 COST VARIANCE ANALYSIS 60
5.6 PROJECT COST CONTINGENCY 60
6.0 RISK MANAGEMENT....61
6.1 RISK PROCESS 20
6.2 RISK REGISTER 21
6.3 RISK MITIGATIONS 22
7.0 PMOC CONCERNS AND RECOMMENDATIONS 66
8.0 GRANTEE ACTIONS FROM QUARTERLY AND MONTHLY MEETINGS 28

TABLES

TABLE 1: SUMMARY OF CRITICAL DATES 8
TABLE 2: PROJECT BUDGET/COST TABLE 8
TABLE 3: NCR AGING SUMMARY 18
TABLE 4.1: RSD CONTINGENCY ANALYSIS 48
TABLE 4.2: 3Q2017 AND 4Q2017 UPCOMING CONTRACT PROCUREMENT MILESTONES 50
TABLE 4.3: FEBRUARY 1, 2017 IPS ESA PROGRAM CRITICAL PATH 51
TABLE 4.4: CS179 CONTRACTOR MILESTONE DATES 55
TABLE 5.1: COMPARISON OF STANDARD COST CATEGORIES: FFGA VS. CBB 57
TABLE 5.2: PLANNED, ACTUAL & PROJECTED CONSTRUCTION CASH FLOWS TO TARGET RSD 58
TABLE 5.3: PROJECT BUDGET AND INVOICES AS OF JANUARY 31, 2017 59
TABLE 5.4: ESA'S CHANGE ORDER LOG IN JANUARY 2017 (>$100,000) 59
TABLE 5.5: SUMMARY OF ESA COST CONTINGENCY 60
TABLE 5.6: CONTINGENCY FROM 2Q2014 THROUGH 4Q2016 61

APPENDICES

APPENDIX A – LIST OF ACRONYMS
APPENDIX B – PROJECT OVERVIEW AND MAP
APPENDIX C – LESSONS LEARNED
APPENDIX D – SAFETY AND SECURITY CHECKLIST
APPENDIX E – ON-SITE PICTURES

APPENDIX F – COST AND SCHEDULE ANALYSIS TABLES
APPENDIX G – POTENTIAL "BUY AMERICA" STATUS SUMMARY
APPENDIX H – AMTRAK REMAINING ESA ELECTRIC TRACTION CONSTRUCTION
APPENDIX I – REMAINING HAROLD INTERLOCKING CONSTRUCTION PROGRESS SCHEMATICS
APPENDIX J – COST PERFORMANCE
APPENDIX K – ESA CORE ACCOUNTABILITY ITEMS

THIRD PARTY DISCLAIMER

This report and all subsidiary reports are prepared solely for the Federal Transit Administration (FTA). This report should not be relied upon by any party, except FTA or the project sponsor, in accordance with the purposes as described below:

For projects funded through FTA Full Funding Grant Agreements (FFGAs) program, FTA and its Project Management Oversight Contractor (PMOC) use a risk-based assessment process to review and validate a project sponsor's budget and schedule. This risk-based assessment process is a tool for analyzing project development and management. Moreover, the assessment process is iterative in nature; any results of an FTA or PMOC risk-based assessment represent a "snapshot in time" for a particular project under the conditions known at that same point in time. The status of any assessment may be altered at any time by new information, changes in circumstances, or further developments in the project, including any specific measures a sponsor may take to mitigate the risks to project costs, budget, and schedule, or the strategy a sponsor may develop for project execution. Therefore, the information in the monthly reports will change from month to month, based on relevant factors for the month and/or previous months.

REPORT FORMAT AND FOCUS

This report is submitted in compliance with the terms of the Federal Transit Administration (FTA) Contract No. DTFT60D1400017, Task Order No. 0002. Its purpose is to provide information and data to assist the FTA as it continually monitors the Grantee's technical capability and capacity to execute a project efficiently and effectively, and hence, whether the Grantee continues to be ready to receive federal funds for further project development.

This report covers the project and quality management activities on the East Side Access (ESA) Mega-Project managed by MTA Capital Construction (MTACC) with MTA as the Grantee and financed by the FTA FFGA.

All Grantee cost and schedule data included in this report is based on the status date of February 1, 2017.

MONITORING REPORT

EXECUTIVE SUMMARY

1. PROJECT DESCRIPTION

The East River tunnels in Manhattan are at capacity. The ESA project is anticipated to improve LIRR tunnel capacity constraints and enable the growth of the overall system. The project comprises a 3.5 mile commuter rail extension of the Long Island Rail Road (LIRR) service from Sunnyside, Queens, to Grand Central Terminal (GCT), Manhattan, utilizing the existing 63rd St. Tunnel under the East River and new tunnels in Manhattan and Queens, including new power and ventilation facilities. The project includes a new eight track terminal constructed below the existing GCT and a new surface rail yard in Queens for daytime train storage. Ridership forecast is 162,000 daily riders (27,300 new riders) in 2020. The project will provide increased capacity for the commuter rail lines of the LIRR and direct access between suburban Long Island and Queens and a new passenger terminal in Grand Central Terminal (GCT) in east Midtown Manhattan, in addition to the LIRR's current Manhattan connection at Penn Station.

2. CHANGES DURING 1st Quarter 2017

a. Engineering/Design Progress

In the ESA January 2017 Monthly Progress Report, MTACC reported that the overall Engineering effort is 99.5% complete vs 100% planned. Its January 2017 Total Cost Report shows 95.0% of the overall EIS and Engineering category as invoiced vs budgeted, and 95.1% of the "Design Subtotal" as having been invoiced.

b. New Contract Procurements

Contract CQ033, Mid-Day Storage Yard Facility, was advertised on October 20, 2016, with bid sets available starting October 24, 2016. The Pre-Bid conference/site tour was held on November 10, 2016. The Bid Opening was extended from December 23, 2016, to February 23, 2017, when four bids were opened. The current forecast Bid Award and Notice-to Proceed date is April 7, 2017.

c. Construction Progress

In the ESA January 2017 Monthly Progress Report, MTACC reported that total construction progress reached 67.8% complete, versus 72.8 % planned. The January Total Cost Report also shows 67.8% of construction as having been invoiced.

d. Continuing and Unresolved Issues

[redacted] MTACC plans to request additional funding through the use of an amendment to the 2015-2019 Capital Plan. This issue is discussed further in Section 5.0, Project Cost, of this report.

With regard to the "ESA First" Harold Re-sequencing Plan developed in December 2014 and implemented in 2015, the PMOC has noted that during 2015 and into 2016, the PMT had been reporting that Amtrak has not been able to provide even the reduced level of force account resources that had been planned in support of the ESA schedule. The Harold Schedule Plan was re-evaluated and further adjusted in early 2016 to account for the recent experience of the project, making work package changes to accommodate the railroad force account resource constraints. The impacts caused by the insufficient Amtrak support have been reduced but not yet eliminated.

Additionally, the projected force account costs are trending noticeably higher than planned [redacted] During 2016, the PMT also funded force account costs using the Management Reserve line item in the Contingency Budget. By mid-3Q2016, ESA completed a comprehensive study to identify and evaluate the reasons for this continuing problem and to make recommendations with regard to a revised basis for planning and scheduling the remaining work in Harold Interlocking and a revised cost forecast. The schedule analysis and re-planning were completed earlier and the results were incorporated into the ESA Integrated Project Schedule (IPS) during 2Q2016. The Harold critical path has become the ESA program critical path and now leads the secondary Manhattan/Systems critical path by approximately three months. The railroad Force Account cost overruns have been evaluated and the additional costs are estimated to be

approximately $246 million, not including the costs of delay impacts to third party contracts. Details of the cost analysis and forecast were presented to the FTA and PMOC on October 26, 2016.

The PMOC has continuing concerns regarding the impact to the ESA Harold work due to the Amtrak program to harden ERT Lines 3 and 4 in preparation for extended outages for ERT Lines 1 and 2 to complete Hurricane Sandy damage-related reconstruction work, now planned for 2019. There is concern, shared by both the PMOC and MTACC, that significant Amtrak Force Account resources will be needed to support the hardening work, which could further reduce the Amtrak resources available to support the ESA Harold Re-Sequencing Plan. During March 2017, MTACC advised the PMOC that Amtrak hardening work on Line 3 had been completed. The PMOC notes that the Line 3 work had minimal impact on East Side Access construction during the period that it was underway. There is also concern that track outages required for the remaining hardening work may conflict with ESA needs to support completion of the planned Harold work, required for LIRR service into GCT by 2021. The PMOC does note, however, that MTACC does not believe that Amtrak's decision about taking ERT Line 2 out of service first, in 2019, for the 18-month reconstruction work will directly impact the completion of the Harold work needed to commence LIRR service into GCT. Amtrak's decision will, however, impact Contract CH058B, Harold Structures – Part 3B, Eastbound Re-route, a Regional Investment initiative having independent utility that is not required to provide the connection to GCT for LIRR service. The ESA-PMT has indicated that there is no work-around plan for this situation where ERT Line 1 can be taken out of service in order to begin construction of the Eastbound Re-route.

e. New Cost and Schedule Issues

[redacted] It should be noted that the forecast amount does not include the anticipated additional costs resulting from the recently completed Harold Force Account Overrun analysis. The ESA Force Account Cost study completed in 3Q2016 resulted in an additional cost projection of $246 million. This study did not, however, consider any additional 3rd party costs for extended overhead and indirect costs resulting from Force Account induced delays. The forecast also does not include the projected OCIP cost overrun, expected to be $191 million according to ESA (although ESA has expectations that the OCIP overrun may be paid be MTA). Finally, the forecast does not include expected additional costs in the Grand Central Passenger Concourse related to water leaks, OICs for Wi-Fi and cellular service, and digital advertising. [redacted] ESA indicates that they will request amendments to the MTA Capital Plans (both 2010 to 2014 and 2015 to 2019), seeking funding for the overruns noted above. The timing of the presentation of the amendment to the 2015-2019 Capital Plan is uncertain. The

ESA amendment was not requested in December 2016 as expected. ESA is now expecting to submit the amendment in the Spring of 2017.

ESA's February 1, 2017 Integrated Project Schedule (IPS) update maintains a forecasted Target Revenue Service Date (RSD) of February 11, 2021, and a Late RSD of December 13, 2022. As of the IPS data date, Program-critical CIL cutover pre-testing had not yet begun at Harold, experiencing a late planned start of approximately three months. The impact of this delay is that the duration for this work to be accomplished has decreased accordingly, with the intention to hold the planned May 2018 CIL cutover dates. Another large change to the Program occurred over the previous quarter, with a Queens Sub-Program path of work being included in the IPS Report, and showing it has overtaken the Manhattan/Systems path of work in terms of criticality to the overall ESA Program. The PMOC maintains its concern about the pace of Program-critical work over the previous quarter. There has been an almost day-for-day delay, while predecessor work to the start of CIL cutover pre-testing was being performed which experienced delays.

3. PROJECT STATUS SUMMARY AND PMOC ASSESSMENT

a. Grantee Management Capacity and Capability

The PMOC has concerns regarding the ability of MTACC to manage the GEC and LIRR to effectively support timely reviews for systems design submittals by the CS179, Facilities Systems, and the CS084, Traction Power, contractors and the amount of time required by the GEC to respond to RFIs and required field change requests on both of these contracts. The PMOC is also concerned about the mid-January 2017 departure of the leader of the OPR Task Working Group (TWG) No. 7, the TWG with the responsibility for Safety and Security certification documentation and development of a Safety and Security Management Plan (SSMP) and Emergency Preparedness and Response Plan. A more detailed discussion of the Sponsor's Management Capacity and Capability can be found in Sections 1.1a and 1.1b, below.

b. Real Estate Acquisition

In its January 2017 Monthly Report, MTACC reported that it successfully completed negotiations with 335 Madison Avenue LLC for easement use of freight elevators and almost 50 other miscellaneous items of work. Additionally, MTACC reported continued progress with the owners of 415 Madison Avenue for easement and work agreements and continued internal progress for revisions to two existing property agreements with Amtrak for MTA Sunnyside Yard access and ESA construction space.

c. Engineering/Design

Progress for remaining design work continues to lag design milestone targets. The GEC and PMT continue to miss target dates for completing remaining design activities on the project due to scope transfers between contract packages, the inability to provide definitive requirements and answers to contractor questions in a timely manner, and other issues involving stakeholders. Although bids were opened for Contract CQ033, Mid-Day Storage Yard, in February 2017, the final design completion of the package was significantly delayed due to incorporation of additional LIRR requested changes, late approval of track clearance waivers required from the NYSDOT that were submitted by LIRR in July 2016, as well as final approval by NYCT of overhead clearance to the No. 7 Line structure that crosses over the proposed LIRR tracks. The need to accommodate Positive Train Control capability in the LIRR signal design has also caused some delays to other packages. Additionally, GEC and LIRR delayed reviews of the CS179, Facilities Design, and CS084, Traction Power, systems designs and late GEC responses to RFIs and Field Change

Requests are not supporting the contractor schedules. Details are provided in Section 2.1 of this report.

d. Procurement

MTACC received bids for Contract CH061A, Tunnel A Approach Structure, on August 2, 2016, and subsequently identified an apparent low bidder. MTACC deferred the Notice of Award and Notice to Proceed, however, based on the planned availability for construction site access and protection by limited railroad force account resources. MTACC awarded the contract on November 22, 2016, and issued the Notice To Proceed on January 27, 2017, a three month delay from the previously forecast date of October 28, 2016. Total Notice to Proceed delay since January 1, 2016, is eight months.

As noted in Section 3c. above, procurement is being delayed due to late completion and approvals of the designs and bid packages. For the remaining procurements that had been planned for 2016, delays to bid advertisement dates from forecast dates at the beginning of 2016 include:

- CM015, 48th Street Entrance – 7 months delay; forecast bid advertisement: April 10, 2017.
- CS086, Tunnel Systems – 12 months delay; forecast bid advertisement: April 20, 2017.

e. Railroad Force Account (Support and Construction)

During March 2017, LIRR Signal personnel continued to install signal conduits, install, terminate, and meggar signal cables, and make signal revisions at the "H1", "H2", "H5", "H6", and Location 23 and 30 CILs, and continued other miscellaneous pre-testing procedures in preparation for the CIL cutovers scheduled for 2018. LIRR 3rd Rail personnel continued to install traction power cables into the new G02 Substation. LIRR High Tension personnel completed installation of the new 135 signal power separation circuit from the east end of Harold Interlocking to pole #28 (the pole that separates LIRR signal power from Amtrak signal power). Amtrak Electric Traction personnel completed installation of the overhead catenary system over the new RPR (Relocated Primary) Track and the Eastward Long Island Passenger (ELIP) Track from the west end of the RPR Track to the #771 crossover in "F" Interlocking.

f. Third-Party Construction

Manhattan:

During 1Q2017, MTACC and the CM005 contractor (Manhattan South Structures) continued negotiations on close out, CPRs, and the pending transfer of work to follow-on contracts. The project site was turned over to the CM007 contract in October 2016.

The CM006 contractor (Manhattan North Structures) continued the rehabilitation/remediation work at the 63rd St. Tunnels and Structures. The contractor completed arch construction at Tunnel WB3, and continued archway construction at the following locations: GCT 3 Crossover, 55th St. Vent Facility, and in the 300 series connecting tunnels. The contractor also continued duct bench construction at the following locations: Tunnel WB3, the 300 series tunnels, and GCT 3 Crossover Cavern. Door and hardware installation continued at various locations including the 50th St. Air Plenum and the 53rd St. Sump. Contact and chemical grouting continued at various locations.

The CM007 contractor (GCT Station Caverns and Track) continued construction of the back of house (BOH) facilities at the south end of the East and West Caverns. In both the East and West Caverns during 1Q2017, the CM007 contractor continued to install precast concrete beams and floor panels at the mezzanine and upper levels. Other activities during this Quarter included: precast element production, drilling elevator piston shafts, concrete placements for the east and

west exterior cavern walls, and the distribution of rail to various locations in the tunnels and caverns.

Queens:

During the 1Q2017, the CQ032 contractor (Plaza Substation and Queens Structures) continued architectural finishes and electrical work in the Yard Services Building, and also continued punchlist activity, close out documentation, and commissioning testing. The second phase of water infiltration repairs at the former Plaza Early Access Chamber and TBM Launch Block areas was completed, and MTACC reported that additional remediation work may be performed. ESA continued negotiation for remaining work scope to be transferred to other contracts.

Harold Interlocking:

Contract CH057 Harold Structures Part 3: During March 2017, the CH057 contractor completed placement of sidewall concrete in the Option 10 portion of the Tunnel D East Approach Structure, completed construction of the 48-S2 retaining wall, continued construction of temporary LIRR MM2 Track near 48th St., placed the #6167E and #6176W turnouts in MM2 Track, and continued wayside electrical installations at various project sites.

Contract CH057A (Westbound Bypass): During March 2017, the CH057A contractor completed construction of the East Approach Structure of the Westbound Bypass (WBY) east of Honeywell Avenue overhead bridge and continued placement of sidewall re-bar and concrete in the West Approach Structure. The contractor remained unable to resume mining of the WBY Tunnel during 1Q2017 as it awaited resolution of its soil "changed condition" assertion from MTACC and its own revisions to the "box shield" to prevent the uplift which plagued its earlier mining attempts. Total delay since August 3, 2016, is now 8 months.

Contract CH061A – Track A Cut and Cover Structure: MTACC issued Notice to Proceed (NTP) to the CH061A contractor on January 27, 2017. During March 2017, the contractor continued to mobilize, make early submittals to MTACC, began to install project control devices, and began hand excavation to locate underground utilities in its work area.

Systems:

Contract CS179 – Systems Facilities Package No. 1: During March 2017, the CS179 contractor continued various elements of work (installation of conduit, cable, fans, fire stopping, fire standpipe, etc.) at the B10; Roosevelt; Vernon; 12th St.; 2nd Avenue; 39th St.; Queens Plaza; and 63rd St. facilities. A number of Stop Work Orders (SWOs) for work on this contract are still in effect. The GEC is still working on designs and solutions to these SWOs but no dates were given for the rescinding of the SWOs. At present, water infiltration issues at the Vernon, Roosevelt, and 29th St facilities remain a serious concern. Water infiltration remediation work at the Vernon and 29th St. facilities was unsuccessful and alternative methodologies to correct the water problems must be developed and implemented. Assembly of equipment racks in the subcontractor's off-site facility is underway.

Contract CS084 Traction Power System Package 4: [**Note:** The information presented for this CS084 contract comes from discussions at a mid-March 2017 Progress Meeting that reviewed contract progress for February 2017 and from the MTACC's January 2017 ESA Monthly Progress Report (MPR)]. While the contractor's work on the L3 electrical service is complete, the LIRR has yet to fully use the service to energize all its signal huts because the MTACC has yet to issue a contract modification for the contractor to perform additional work that was identified in November 2016. The contractor continues to perform site surveys and submit design

documentation. Three major issues continue to significantly impact the timely progression of work on this contract, allowing the contractor to assert that the MTA is causing delays on this contract. In its January 2017 MPR, the MTACC now cites a May 2020 SC date; a two-month delay from the SC date reported in its December 2016 MPR. The MTACC contends that the two-month delay in SC is due to a projected delay in the CM007 contract that impacts an Access Restraint for the CS084 contractor.

VS086 – Systems Package 3 – Signal Equipment Procurement

In its January 2017 ESA Monthly Progress Report, despite acknowledging that interim contract milestones show delays of anywhere from 12 to 23 months, the MTACC continues to forecast an SC date that remains the same as that established at contract award (October 14, 2019). The MTACC indicates in its report that it is currently in discussions with the contractor to re-establish interim milestone dates. However, the PMOC notes that there are several other unresolved design issues which have the potential to impact the contract completion date that are not being considered yet in the adjustment of the interim milestones. The continued absence of an accurate and comprehensive schedule that shows all contemplated contract activities is an impediment to the MTACC's ability to effectively manage this contract. The contractor continues to raise concerns over the timeliness of responses from the MTA on design submittals and inquiries.

g. Vehicles

Details of the federal and non-federal vehicle procurements are provided in Section 2.5 of this report. The PMOC notes that the federal vehicle procurement has fallen behind schedule.

h. Commissioning and Start-Up

The PMOC was advised that the vacancy on Task Working Groups (TWG) No. 7, the TWG responsible for Safety and Security certifications and other Safety/Security-related items, that was created when the original leader of that TWG left the ESA Project in mid-January, has been filled. However, it appears that no progress has been made since the PMOC's last report on the Safety and Security Certification process. As no quarterly briefing of the Operational Readiness (OR) group has been held yet in 2017, the progress of the remaining TWGs related to the commissioning and startup of the ESA Project remains to be statused. The next Quarterly Operational Readiness briefing will be held in April 2017 and the status of the progress of all the TWGs will be discussed. The PMOC's concerns about the lack of progress on the Safety and Security Certification process are detailed in Sections 1.5 and 2.4 of this report.

i. Project Schedule

Table 1 provides a summary of critical milestone dates including PMOC and Grantee forecasts:

Table 1: Summary of Critical Dates

	FFGA		Forecast (F) Completion, Actual (A) Start

		Amended FFGA***	Grantee*	PMOC
Begin Construction	September 2001	September 2001	September 2001 (A)	September 2001 (A)
Construction Complete	December 2013	December 2023	December 2022 (F)	September 2023 (F)**
Revenue Service	December 2013	December 2023	December 2022 (F)	September 2023 (F)

* Source – Grantee forecast late Revenue Operations Date per information presented to the MTA CPOC in June 2014.
**Source –Based on PMOC 2014 schedule trending analysis representing a medium degree of mitigation.
***Source – Amended FFGA (August 2016)

j. Project Cost

Table 2 provides a summary of project cost estimates and expenditures vs. the FFGA forecasts:

Table 2: Project Budget/Cost Table (December 31, 2016)

	FFGA				MTA's Current Baseline Budget (CBB)		Expenditures December 31 2016	
	Original FFGA (Millions)	Amended FFGA (Millions)	(% of Grand Total Cost)	Obligated	(Millions)	(% of Grand Total Cost)	(Millions)	(% of CBB)
Grand Total Cost	$ 7,386	$ 12,038	100.00%	$ 4,724	$ 11,214	100.00%	7364.5	65.67%
Financing Cost	$ 1,036		14.03%	$ 617	$ 1,036	9.24%	617.6	59.61%
Financing Cost		$ 1,116	9.27%					
Total Project Cost	$ 6,350		85.97%	$ 4,107	$ 10,178	90.76%	6746.9	66.29%
Total Project Cost		$ 10,922	90.73%					
Federal Share	$ 2,683		36.33%	$ 1,148	$ 2,699	24.07%	1968.2	72.92%
Federal Share		$ 2,683	22.29%					
5309 New Starts share	$ 2,632		35.63%	$ 1,098	$ 2,437	21.73%	1706.1	70.01%
5309 New Starts share		$ 2,632	21.86%					
Non New Starts share	$ 51		0.69%	$ 50	$ 67	0.60%	66.7	99.55%
Non New Starts share		$ 51	0.42%					
ARRA	$ -	$ -	0.00%	$ -	$ 195	1.74%	195.4	100.21%
Local Share	$ 3,667		49.65%	$ 2,959	$ 7,479	66.69%	4778.7	63.89%
Local Share		$ 8,239	68.44%					

k. Project Risk

The PMOC notes that the project's risk exposure to completion of the remaining work in Harold Interlocking continued to increase based on new issues that arose during 2016 and delays completing the predecessor activities to the CIL pre-testing phase. The PMOC is concerned about this trend because the Harold work is on the ESA program critical path. The PMOC notes that completion of the Harold work planned during 2017 and 2018 is critical for the overall ESA program schedule performance. Details regarding risk management and risk mitigation are provided in Section 6.0 of this report.

l. FTA Quarterly Review Meeting

The FTA Quarterly Review Meeting for East Side Access and Second Avenue Subway (Phase 1) was held on February 15, 2017. Highlights of the ESA discussion include:

- Regarding MTACC's claim against the GEC on the ESA Project, MTACC counsel noted that the parties remain engaged in binding arbitration for the liability phase. The discovery phase is now complete. However, the follow-on hearings planned for February 2017 that start the arbitration process have been temporarily paused due to progress with the concurrent mediation effort. MTACC counsel reported that many mediation meetings have taken place since the mediation process commenced in November 2016. Counsel understands that the parties may be close to a settlement. The PMOC notes that MTACC is actually litigating against the GEC's insurance underwriter for the errors and omissions coverage with regard to MTACC's claim alleging GEC deficiencies in the design of the modifications to the Harold Interlocking.
- Amtrak support for the ESA work in Harold Interlocking was discussed. MTACC management has met with the new Amtrak president and noted that he appears to be more supportive of MTA and ESA. The Amtrak president will attempt to encourage the railroad unions to support labor agreements to allow MTACC to shift more of the Harold work to third-party contractors. Amtrak also agreed to restart the effort, started several years ago, to develop a regional Amtrak schedule for force account resource planning. MTACC will bring on HNTB to work with Amtrak to develop a resource-loaded schedule.
- Regarding Capital Plan Funding, ESA noted that the ESA Amendment to the 2015-19 Capital Plan is in development but is currently not being acted on. [redacted]
- ESA noted the critical activities that must be achieved in Harold Interlocking to support the ESA's December 2022 Revenue Service Date and discussed progress to date:
  - Combined CIL Cut-Overs scheduled for May 2018 during major LIRR track outage.
    - CIL cut-over pre-testing, performed by a LIRR force account personnel dedicated to ESA, will begin in early March 2017 and is currently on schedule. The PMOC notes that pre-testing actually began in late March 2017, but progress to date is not sufficient to determine if it is on schedule or not.
    - The critical factor at this stage is getting the eight committed Amtrak/LIRR weekend track outages between March 1, 2017, and August 31, 2017, for the pre-testing.
  - Complete remaining work in the Northeast Quadrant of the Harold Interlocking.
  - Demolition of existing track and turnouts, modifications to Amtrak catenary and LIRR third-rail at the location of the B/C Tunnel Approach Structure.
  - Award of Contract CH058A, Harold Structures – Part 3A, B/C Approach

The next FTA Quarterly Review Meeting for East Side Access has not yet been scheduled.

m. FTA Triennial Review

The East Side Access Project's Triennial Review by the FTA is scheduled for April 2017. MTACC and the ESA PMT have been working with the FTA in preparation for this review.

MONTHLY UPDATE

The information contained in the body of this report is in accordance with Oversight Procedure #25, to "inform the FTA of the most critical project occurrences, issues, and next steps, as well as professional opinions and recommendations". Where a section is included with no text, there are no new "critical project occurrences [or] issues" to report this month.

ELPEP COMPLIANCE SUMMARY

The current status of each of the remaining main ELPEP components is summarized as follows:

- **Technical Capacity and Capability (TCC):** The FTA requested MTACC to update its TCC Plan in response to the FTA/PMOC comments that were generated in November 2013 as a result of significant changes in key ESA upper level management positions. MTACC submitted its revised Technical Capacity and Capability Plan (ESA and SAS) on April 13, 2015. The PMOC returned comments to the FTA on May 7, 2015. MTACC submitted a revised TCC Plan in response to FTA/PMOC comments on June 12, 2015. In August 2015, the PMOC provided the FTA with its evaluation of the MTACC responses to the PMOC review comments and recommended a meeting with MTACC to resolve remaining issues. The FTA subsequently provided MTACC with the evaluation. MTACC responded with a reply on September 24, 2015.
- **Continuing ELPEP Compliance:** The following ELPEP components continue to need improvement: Management Decision; Design Development; Change Control Committee (CCC) Process and Results; Stakeholder Management; Procurement; and Risk-Informed Decision Making. The PMOC has noted progress in two previously identified areas – Issues Management and Timely Decision Making, particularly when responding to new issues arising with the railroads' Force Account resource availability, track outages, and other issues regarding the remaining work in Harold Interlocking. The ESA Risk Manager continues to work on re-establishing risk management as one of the key inputs to the decision-making process. To assist MTACC with focusing efforts on improving ELPEP compliance in the remaining areas, the PMOC has started to re-evaluate the situation based on the current revisions of the CMP, SMP, and RMP, and expects to able to complete this effort during late 2Q2017 – early 3Q2017.
- **Project Management Plan:** The PMOC completed its review and evaluation of the MTACC's revisions and responses and submitted its findings to FTA-RII in 4Q2014. The MTACC subsequently submitted a revised Rev. 10 on March 13, 2015, that included updated information on the Change Control Committee. The revised Rev. 10 of the PMP was reviewed by the PMOC against the PMOC's evaluation in 4Q2014. The PMOC coordinated with MTACC to arrange working meetings with ESA chapter authors and the corresponding PMOC reviewers to resolve the remaining outstanding FTA/PMOC evaluation comments. Several working meetings were held between June 2015 and December 2015. Through 2016, MTACC and the PMOC continued working together to complete this process and to coordinate the reviews of the revised SMP and CMP Sub-Plans with the associated sections of the PMP. MTACC submitted the next revision to the PMP in June 2016 that reflects ESA organizational changes along with some additional updates and revisions to certain sections. The PMOC is currently nearing completion of its evaluation and expects to issue the results in April 2017.
- [redacted]

[redacted]

The PMOC notes that, since June 2013, the ESA project has not been in full compliance with ELPEP, and is, in the opinion of the PMOC, not meeting some of the more important requirements of the Schedule Management Plan (SMP) and Cost Management Plan (CMP), both sub-plans of the PMP. The PMOC believes that this continues to be a deficiency that needs to be resolved. **[Ref: ESA-114-Sep13]** The PMOC does note, however, progress in certain areas. The PMOC's major areas of concern include:

- **Schedule Management Plan (SMP)**: The ESA project remains partially non-compliant with requirements for Integrated Project Schedule (IPS) Updating, Forecasting, [redacted] against a current baseline schedule. The revised SMP was submitted in 4Q2015 and the PMOC completed its review in June 2016. Review comments were forwarded to MTACC on July 15, 2016, and a working meeting was held on August 25, 2016, to review, discuss, and resolve the comments. MTACC has followed up with the agreed upon revisions to the SMP and has completed its responses in the review comment matrix. During October 2016, MTACC submitted the completed review comment matrix and a revised SMP. The PMOC has completed its evaluation, found no significant issues and provided its findings to the FTA in November 2016, which the FTA subsequently forwarded to MTACC. In January 2017, MTACC submitted additional documents to the FTA and the PMOC in response to the remaining comments. The PMOC has now completed its evaluation, concluded that the CMP is acceptable, and provided the FTA with comment close-out details in March 2017.
- **Cost Management Plan (CMP)**: The ESA project remains partially non-compliant with requirements for Project Level EAC Forecasting, Project Level EAC Forecast Validation, [redacted] and Secondary Mitigation. The PMOC has noted some improvement in a number of areas, but more work is needed in other areas. After progressing with resolution of many PMOC comments, the PMOC met with MTACC in November 2015 to focus on the remaining issues. MTACC continued working on additional agreed upon revisions and evaluated the PMOC's recommendations in six areas. MTACC provided an initial draft of the revised CMP on December 15, 2015, and the PMOC completed its review in early June 2016. MTACC and the PMOC met on June 22, 2016, to review the PMOC comments. During October 2016, MTACC submitted the completed review comment matrix and a revised CMP. The PMOC has completed its evaluation, concluded that the CMP is acceptable, and provided the FTA with comment close-out details in November 2016. The FTA subsequently notified MTACC that the revised CMP is acceptable.

Revisions to the ELPEP Document:

[redacted] The PMOC's recommendations were presented at several meetings with MTACC in 2015. [redacted]

[redacted] The PMOC continues work on a draft revision to the ELPEP document that reflects these agreements.

1.0 GRANTEE'S CAPABILITIES AND APPROACH

1.1 Management Capacity and Capability

a) Organization

During 1Q2016, the project organization was revised. The PMOC has been monitoring this organizational restructuring and has not noted any significant change in the Sponsor's ability to generally maintain the required level of Management Capacity and Capability. The PMOC does note, however, continuing problems with regard to the GEC and LIRR support of the review and approval process for the contractors' final designs for systems under Contracts CS179 and CS084, as well as the GEC's late responses to RFIs and Field Change Requests on these contracts. These issues have continued into 1Q2017.

b) Staffing

Regarding the ESA Operational Readiness group, the PMOC notes that the leader of the OPR Task Working Group (TWG) No. 7, the TWG with the responsibility for Safety and Security certification documentation and development of a Safety and Security Management Plan (SSMP) and Emergency Preparedness and Response Plan, left the ESA project in mid-January 2017. The PMOC notes that this individual held a key position and was involved with safety and security certification process for many years. The PMOC remains concerned about this transition and its potential impact to the program's very complex safety and security certification effort. See Section 2.4 of this report for details.

1.2 Project Management Plan

a) History of Performance

MTACC re-baselined the ESA Project in May 2012. This re-baseline resulted in a risk adjusted budget of $8.24B (not including rolling stock reserve and finance cost) and a projected RSD in August 2019. During 2013 and 2014, ESA undertook an extensive re-planning effort to revise the Program budget and schedule as a result of the CM012R bid overrun in 4Q2012 and continuing delays in several other major procurements (e.g., CS179; CM014B). This was the third re-planning effort undertaken by ESA since the FFGA in 2006 (the first re-planning effort took place in 2009). The current re-planned budget ($10.177B) and schedule (RSD (late forecast) in December 2022) were presented to the MTA CPOC in June 2014 and approved. The PMOC notes that ESA has been dealing with schedule performance set-backs primarily in the following areas: earlier funding issues that delayed award of contracts and systems contract options; poor performance by the CM006 contractor; insufficient progress of work on Contracts CS179 and CS084; late award and NTP for Contract CM007; significant delays to completion of design for CQ033, CM015, CS086 and ongoing delays in Harold Interlocking work caused by continued lack of adequate railroad force account support.

b) PMP

MTACC submitted PMP Rev. 10 to the FTA and PMOC on July 18, 2014. This revision incorporates changes stemming from FTA/PMOC comments on PMP Rev. 9.0 provided in December 2013 as well as changes that resulted from MTACC's Candidate Revision process. Based on working meetings, dialogue, and additional clarifying review comments from the PMOC, MTACC made additional changes to the PMP and submitted an updated Rev. 10 on September 18, 2014. The PMOC reviewed Rev. 10 and provided its comments to the FTA in 4Q2014. A subsequent update to the Rev. 10 document was submitted on March 13, 2105, reflecting only

revisions to the ESA Change Control Committee. The PMOC worked with MTACC to arrange working meetings with ESA chapter authors and the corresponding PMOC reviewers to resolve the remaining outstanding FTA/PMOC evaluation comments. Several working meetings have been held since June 2015 and continued through December 2015. Through 2016, MTACC and the PMOC continued working together to complete this process and to coordinate reviews of the revised SMP and CMP Sub-Plans with the associated sections of the PMP. MTACC and the PMOC met in June 2016 to review the PMOC's comments on the Cost Management Plan. The PMOC completed its review of the revised Schedule Management Plan in late June 2016. Based on MTACC provided additional responses and documentation during 2016 and into 2017, the PMOC recommended acceptance of the current revised CMP and SMP in, respectively, November 2016 and March 2017. MTACC submitted the next revision to the PMP in June 2016 that reflects ESA organizational changes along with some additional updates and revisions to certain sections. The PMOC is nearing completion of its reviews of the latest version of the PMP and expects to provide its evaluation in April 2017.

1.3 Project Controls

a) Schedule

[redacted]

b) Cost

[redacted]

1.4 Federal Requirements

a) FFGA

As a result of MTACC's re-baselining of the ESA Project budget and schedule on three separate occasions (2009, 2012, and 2014) since the FFGA was signed in 2006, an FFGA amendment has been developed and has been approved by the FTA. The PMOC notes that the FFGA Amendment was fully executed with MTA's sign-off of August 2, 2016. The amended FFGA incorporates the changes in the Baseline Cost Estimate and Revenue Service Date that have occurred since 2006 when the original FFGA was signed. In June 2014, MTACC presented a new project budget of $10.177 billion (excluding the Rolling Stock Reserve and finance costs) and a new schedule with an RSD of December 2022 to the MTA CPOC. The amended FFGA includes a budget of $10.922 billion ($10.459 billion before Rolling Stock Reserve and finance costs) and an RSD of December 2023. The new Baseline Cost Estimate and Revenue Service Date are based on the PMOC's earlier analysis that included considerations of historical ESA performance and future risks.

b) Federal Regulations

As an FTA full funding grant recipient, MTA is required to meet the requirements of the Buy America Act. The PMOC makes note of current and new issues regarding this requirement in this section and includes additional details in the corresponding contract status in both Section 2.3 and Appendix G.

Contract CS179, Systems Package 1: There are currently three issues affecting proposed equipment. Please refer to Appendix G for details.

Track Turnouts:

As the PMOC has noted in previous Monthly Reports, there remain approximately 41 turnouts that ESA must purchase for future years' installation in Harold Interlocking which must meet "Buy America" requirements. The GEC revisions for the remaining Amtrak turnouts were approved in January 2016, but the orders for those turnouts have been on "hold" due to the reduction in priority for Loop and "T" Interlockings as a result of the adoption of the "ESA First" construction schedule for the Harold Interlocking.

The PMOC closely followed the development of the procurement package to purchase the remaining "Buy America"-compliant turnouts for LIRR during 1Q2017. ESA issued an expedited Request for Bid (RFB) contract package for 4 of those turnouts (for 2 crossovers) needed for the 2018 "Northeast Quadrant" track reconfiguration in early January 2017. Bids were originally due on March 17, 2017, but, due to clerical errors in the advertisement, the due date was extended until April 13, 2017. As a result, the PMOC continues to believe that it will be mid-to-late 2Q2017 before MTACC is in a position to place the order for the LIRR "Buy America" compliant turnouts. Since turnouts are long lead items which could take 12-18 months from order to delivery, the PMOC remains concerned that MTACC may not have all the turnouts on hand that it plans to install during major track outage scheduled for summer of 2018 to do the "Northeast Quadrant" work. [**REF: ESA-123-Jun16]**

1.5 Safety and Security

a) Safety Certification Process

The PMOC was recently advised that the vacancy on Task Working Groups (TWG) No. 7, the TWG responsible for Safety and Security certifications and other Safety/Security-related items,

that was created when the original leader of that TWG left the ESA Project in mid-January, has been filled. However, it appears that no progress has been made since the PMOC's last report on either certification process. Schedules showing the completion of safety certificates for the design and construction phases of the various contracts need to be developed and incorporated into the overall ESA Project IPS.

b) Project Construction Safety Performance

Through January 2017, ESA project safety statistics for lost time accident and OSHA recordable injuries on active construction contracts continued to trend below the Bureau of Labor Statistics (BLS) national average with a CY2016 project wide ratio of 0.71* versus 1.70 (2016 BLS average) lost time accidents (LTA) per 200,000 work hours. The ESA recordable rate for CY2016 through December 2016 was 1.98 versus 3.0 (2016 BLS average).

*These are PMOC calculated rates based information contained in ESA's "12 Month Rolling Cumulative Profiles of Lost Time and Recordable Injury Rates" for December 2016, the latest information available to the PMOC. The Grantee, however, uses a 12 month rolling average for its OSHA statistics.

c) Security

The ESA PMT did not report any significant security issues in its January 2017 Monthly Progress Report.

d) Security Certification Process

The PMOC was recently advised that the vacancy on Task Working Groups (TWG) No. 7, the TWG responsible for Safety and Security certifications and other Safety/Security-related items, that was created when the original leader of that TWG left the ESA Project in mid-January, has been filled. However, it appears that no progress has been made since the PMOC's last report on either certification process. Security certifications of contract designs and as-built construction reflect the methodology the MTA will use to address perceived security threats identified in the Threat Vulnerability Assessment made for ESA facilities and operation. It is important that the appropriate elements be "designed into" and incorporated into each contract on the ESA Project. Schedules showing the completion of security certificates for the design and construction phases of the various contracts need to be developed and incorporated into the overall ESA Project IPS.

1.6 Project Quality

Quarterly Quality Oversights (QQOs): The 4Q2016 QQOs were performed in January and February 2017, some of which utilized the newly revised QQO (now called Quality Audit) process. All but one of the resulting Reports have been issued, with the outstanding one being the CH057A Report. The PMOC reviewed the reports for the other QQOs. Several included statements indicating that the resolution of NCRs in a timely and appropriate manner was an area of needed improvement. The schedule for 1Q2017 QQOs will be issued in April 2017, with the audits beginning in that month. The CH057 Report follows the new Quality Audit format, which marries the QQO's element-based approach to a task and process-based approach. Having reviewed this Report, the PMOC believes that the new format adequately assesses contractor quality implementation.

Nonconformance Reports (NCRs): Table 1.1 provides a summary of NCR status on the major active contracts for ESA, as per the latest available contractor NCR logs. It lists total NCRs for each contract, broken down into closed NCRs, NCRs open for less than 90 days, and NCRs open for over 90 days. The table includes data for most active construction contracts over the past three

quarters, minus 3Q and 4Q2016 NCR log data for CM014B, as the ESA QM staff member covering this contract was on leave at the time (as reported previously). The PMOC also notes that the CM014B NCR log contains less detailed information than the NCR logs for other contracts.

Table 3 – NCR Aging Summary

Contract	Period	3Q2016	4Q2016	1Q2017
CM007	< 90 days Open	N/A	2	7
	> 90 days Open	N/A	N/A	1
	Total Open	N/A	2	8
	Total Closed	N/A	0	2
	Total NCRs	N/A	2	10
CM014B	< 90 days Open	*	*	0
	> 90 days Open	*	*	8
	Total Open	*	*	8
	Total Closed	*	*	18
	Total NCRs	17	26	26
CQ032	< 90 days Open	3	5	3
	> 90 days Open	1	1	5
	Total Open	4	6	8
	Total Closed	92	94	95
	Total NCRs	96	100	103
CH053	< 90 days Open	0	0	0
	> 90 days Open	1	0	0
	Total Open	1	0	0
	Total Closed	90	91	91
	Total NCRs	91	91	91
CH057	< 90 days Open	7	5	6
	> 90 days Open	4	0	1
	Total Open	11	5	7
	Total Closed	0	11	15
	Total NCRs	11	16	22
CH057A	< 90 days Open	1	1	1
	> 90 days Open	3	3	3
	Total Open	4	4	4
	Total Closed	10	13	13
	Total NCRs	14	17	17
CS179	< 90 days Open	9	4	0
	> 90 days Open	7	13	15
	Total Open	16	17	15
	Total Closed	15	18	20
	Total NCRs	31	35	35
*Data not received				

The PMOC reviewed each of these NCR logs in detail, as well as following up on issues and status with ESA QM staff, and provides the following observations, by contract:

- **CM007:** Work on this project is ramping up, but there needs to be an increased focus on the contractor's quality planning and management. There were 8 new NCRs opened in 1Q2017, 6 of which remained open at the end of March. The 4Q2016 QQO noted issues with revision control of the contractor's quality plan, Material Receiving Inspection forms not being filled out properly, a lack of quality activities on the six-week-look ahead schedule, and a lack of compliance with their own subcontractor/supplier audit schedule (only one of six scheduled audits was performed).

- **CM005:** All work has stopped on site. MTACC and the contractor continued negotiations on close out, CPRs, and the pending transfer of remaining work to follow-on contracts. Approximately ten (10) Nonconformance Reports (NCRs) remain open.
- **CM006:** There are fifty-five (55) open NCRs, and approximately one-third have "Use-As-Is" status pending closure paperwork. The contractor has brought in a subcontractor to address an existing water infiltration condition over work installed by the CM006 contractor, under the existing F Line subway tunnel at York Ave.
- **CH057:** No NCRs were closed in March 2017. There are currently 7 total NCRs, 5 of which remain "ball in court" to the contractor. The oldest of these was opened in December 2016, which the contractor has put on hold for mitigation, root cause, and corrective action assignment until they can have a meeting with their responsible subcontractor to discuss. Two of the seven were recently implemented and are awaiting verification. Timely follow-up of root cause and corrective action was identified as a potential problem in the quarterly audit conducted on February 1, 2017.

1.7 Stakeholder Management

a) Railroads

Amtrak:

Based on long standing issues and concerns regarding Amtrak's ability to provide sufficient force account support to the ESA project, especially Electric Traction (ET) resources, ESA completed a Harold schedule re-sequencing in December 2014, also known as "ESA First," that advanced work elements required for the new LIRR service to GCT and delayed some of the FRA funded High Speed Rail (HSR) work beyond 2017. Railroad construction work prior to development of the "ESA First" schedule was also falling behind schedule due to the overall delays to much of the Harold work. Additionally, the sequence in which Amtrak decides to do its own work to reconstruct its East River (ERT) Line 1 and Line 2 tunnels that were damaged by Superstorm Sandy could have a significant impact on the "ESA First" schedule. Amtrak has notified MTACC that it plans to close ERT Line 2 first in 2019. The selection of Line 2 to close first will delay completion of Contract CH058B, Harold Structures – Part 3B, Eastbound Re-route, a Regional Investment initiative having independent utility that is not required to provide the connection to GCT for LIRR service, until after RSD. However, MTACC expects that this will not impact the remaining FFGA work in Harold Interlocking that is required to provide LIRR service into Grand Central Terminal. Both parties need to continue to work together to develop a more detailed ERT Line 1 and Line 2 outage schedule that will have the least negative impact on ESA. At present, Amtrak's work is not planned to begin until 2019, so the PMOC believes that there should be sufficient time to develop such a schedule.

ESA-PMT reports that Amtrak has been providing consistent levels of support over the last few months and this allows ESA to more effectively plan work in Harold on a week-to-week basis. The PMT does acknowledge, however, that the level of support remains less than required to adequately support the Harold baseline schedule. This continuing problem may prevent ESA from completing the Harold work planned for 2017-18 that is critical to achieving the target RSD of February 2021, although ESA has been able to maintain acceptable progress through March 2017. The PMT further noted that Amtrak's New York Division, which is responsible for the force account resources assigned to the ESA Harold Interlocking work, has apparently indicated that ESA is not their top priority. Currently, the Moynihan Station project is Amtrak's top priority for

assignment of force account resources. The PMOC believes that this situation will need to change soon in order for Amtrak to be able to provide the required force account resources and track outages required to support ESA's schedule for completion of the remaining work in the Harold Interlocking. Based on recent meetings with Amtrak, MTACC management is hopeful that the new Amtrak president will be more supportive of the remaining ESA work in the Harold Interlocking.

Long Island Rail Road:

As the agency that will operate the new ESA facilities, LIRR is the primary project stakeholder. With completion of most of the heavy civil work, the project is now in the next phase of construction to complete the GCT station facility, install all the trackwork and systems and complete the testing, start-up, and commissioning. LIRR's level of direct involvement with the ESA project has increased and will continue to do so through commencement of revenue service. LIRR will need to commit the resources and management availability to work with MTACC in support of the ESA project needs and to provide timely decisions when requested in response to design or construction issues. The PMOC will continue to monitor and report on any significant issues that result from decisions or actions taken by LIRR regarding critical aspects of the ESA program.

Federal Railroad Administration:

MTA continues to work with both the FTA and the FRA to resolve funding drawdown issues with regard to the FRA High Speed Intercity Passenger Rail Grant for $295 million.

b) Others Stakeholders

Although there are other external stakeholder issues that ESA must address, at present there is no evidence that any might have a significant negative impact on the project schedule or cost.

1.8 Local Funding

a) MTA/New York State (Capital Plan)

The funding concern that the PMOC previously identified was resolved in May 2016 with CPRB approval of the 2015-19 Capital Plan. ESA is now seeking supplemental funding for the forecasted cost overruns related to Harold Force Account work (expected to be $246 million not including any 3rd Party extended overhead costs), the OCIP cost overrun ($191 million), as well as wireless cellular/WIFI, digital advertising, and leak remediation on the CM014B contract. [redacted] MTA had planned to include the ESA components in its presentation for the plan amendment in December 2016, but was directed to submit the ESA components as a stand-alone amendment in 2017. The PMOC is concerned that this may introduce additional delays.

b) Other Sources

The total FTA funding commitment, as of December 31, 2016, remained at $2.699 billion, as indicated in Table 2 in the Executive Summary.

1.9 Project Risk Monitoring and Mitigation

a) Risk Management Plan (RMP)

The MTACC RMP, Rev. 2, dated July 2012, is a sub-plan within the ESA Project Management Plan (PMP). The RMP, Rev. 2, was updated and incorporated FTA/PMOC review comments to bring it into compliance with the ELPEP principles and requirements. The FTA formally notified MTACC of its conditional acceptance of the RMP by letter dated March 4, 2013.

The ESA Risk Manager plans to update the RMP during 2Q2017.

b) Monitoring

The ESA Risk Manager held program level risk meetings with the PMOC in March 2016, June 2016, and December 2016, and plans to have these meetings on a regular basis as he continues to update and streamline the risk management process. He has made changes to the updating and tracking of program level risk in the Risk Register and continues to work on issuing the Risk Register updates on a regular basis.

c) Mitigation

Current risk mitigations are discussed in Section 6.3 below.

2.0 PROJECT SCOPE

Contract CH057D, Harold Track Work, is a new package whose work scope is currently being finalized by the PMT and the CM. Preparations for a labor clearance request to LIRR continue and meetings with the unions are ongoing.

2.1 Engineering/Design and Construction Phase Services

As of the end of January 2017, MTACC reported that the overall Engineering effort was 99.5% complete, based on the monthly report, compared with a planned status of 100%. Its Monthly Total Cost Report shows 95.0% of the overall EIS and Engineering category as invoiced and 95.2% of the budgeted section titled "Design" (including Design Settlement) as having been invoiced.

Status of Construction Packages Advertised:

The Contract CQ033, Mid-Day Storage Yard Facility, bid package has been completed, the contract was advertised in October 2016, and bids were opened on February 23, 2017. Through March 2017, work continued on resolving remaining issues, which are listed below. Selected design or specification changes have been included in bid addenda. Other changes will be made by change order after contract award as detailed below.

- ESA-PMT continues to work with LIRR on labor clearance for track and traction power work.
- The CQ033 package required design variance approvals regarding LIRR track standards and clearances in order to provide sufficient yard capacity to store twenty-four 12-car train-sets. All track standard and clearance issues with LIRR were resolved in late May 2016, although a waiver was still required from NYSDOT to resolve the track vertical and horizontal clearance issues. In early July 2016, LIRR submitted a waiver request to NYSDOT regarding the substandard clearances required by the design. MTACC received 5 questions from the NYSDOT and provided responses the same day, February 14, 2017. NYSDOT approval was received on February 23, 2017. The PMOC notes that it has taken over 7 months for LIRR to obtain this approval.
- GEC continues work on the eight items in PCO-211 that include changes for cost savings as well as LIRR's request to revise the variance package for geometric alignment and vertical track clearance for underground pipelines. The PMT has indicated that a number of these changes have been added to the contract by addendum, but other changes, including many of those for cost savings, will be added through contract modifications after construction contract award.

The package was advertised on October 20, 2016, with plans available for pick-up on October 24, 2016. At that time, the forecast bid due date was December 22, 2016 but was delayed three more times until the bid opening on February 23, 2017. Delays through 2016 and into 2017 now total 8 months.

Status of Construction Packages Not Advertised:

On Contract CM015 (48th St. Entrance), the MTA Board had previously approved the design agreement with the building owner. The building owner, Rudin Management Corporation (RMC), agreed to provide the designs for the relocation of the existing interior utilities and to complete some limited structural design. MTA is continuing discussions with RMC and is nearing completion of the required easements and construction agreements. Turner Construction was awarded the utility construction contract and it started work in August 2016. The utility relocations

are approximately 85% complete and Phase 1 is forecast to be completed by April 30, 2017. The GEC is only reviewing shop drawings for coordination with the CM015 work scope and is not approving the shop drawings. MTACC Counsel has started legal review of Division 1 in the specifications. Submittal will be made to the NYC Department of Buildings upon incorporation of all comments and issuance of the signed and sealed plans. Bid advertisement had been scheduled for September 27, 2016, was revised to November 29, 2016, then to February 28, 2017, and is now forecast April 6, 2017. Delays through 2016 and into 2017 will be 7 months.

Contract CH058A will include construction of the Tunnel B/C Approach Structure. The 90% design submission was made on June 17, 2016, and the ESA Project Management Team and LIRR have returned their comments to the GEC. The 90% package was sent to Amtrak on October 28, 2016. MTACC received Amtrak comments on the CH058A package during February 2017. An updated FHA03 design package was submitted to Amtrak in mid-February 2017 to reflect changes made in support of CH058A regarding required catenary and track alterations.

Contract CH058B will include construction of the East Bound Re-route. The GEC has been developing the scope of work for finalizing the tunnel design based on a cut-and-cover construction method. LIRR has agreed to the track outages required to support the cut-and-cover construction but has requested additional rail traffic simulations from their consultant. The simulation proposal was submitted in November 2016 and the simulations are now in progress. The rail traffic simulation outcomes will not impact the design for Contract CH058B. MTACC has directed ESA to proceed with design finalization of CH058B based on using the cut-and-cover tunnel construction method and without the Temporary Eastbound LIRR Passenger (TELP) Track.

Contract CS086, Systems Package 2 - Tunnel Systems, is a stand-alone package. MTACC reports that PCO C184 to finalize the package was approved and the GEC has completed the work. The 100% design submission was forwarded to LIRR on October 21, 2016, for review, and comments were returned. The scope of this change order includes a refresh of the package and changes control of Plaza Interlocking from Penn Station Control Center to the GCT Train Operations Center. The scope of work of PCO C184 does not include Positive Train Control (PTC) design, which will be provided by LIRR. Based on when LIRR completes the PTC design, the PTC scope will be added to the CS086 contract either by addendum before bidding or by contract modification after award. The bid advertisement date is now forecast for April 20, 2017, a delay of almost two months from the previously forecast date of March 1, 2017. Delays through 2016 and into 2017 will be six months.

Contract VS086, Systems Package 3 – Signal Equipment Procurement, is a contract for procurement of Signal equipment and systems for installation under the future CS086 Tunnel Systems Package 2 – Signal Installation contract. The Contractor's designs for the various equipment and systems have been underway since NTP was given in September 2014. Progress, however, on the interim design milestones on this contract continues to be significantly behind schedule; although the MTACC's substantial completion (SC) date of October 14, 2019, remains unchanged from the original contractual date. MTACC is currently in discussions with Ansaldo STS, the contractor, to re-establish interim milestone dates. The PMOC is concerned that several other contract issues that could potentially impact the contract completion date are not being considered in these interim milestone adjustment discussions.

FQA33A, Mid-Day Storage Yard Facility – Amtrak F/A, includes provision for yard access to Amtrak via Sub 4 to Line 2. ESA met with Amtrak and there is one outstanding issue. When the issue is resolved, ESA will re-issue the 100% design package.

FQA33B, Mid-Day Storage Yard Facility – Amtrak F/A, includes provision for yard access to Amtrak via Sub 3 to Line 4. Amtrak, LIRR, and ESA plan to meet in the near future to discuss the diamond crossover proposed in the design package.

Status of MTACC and LIRR Review and Approval of Systems Contractors' Final Designs:

The CS179 contractor continues to work on the design development of the various contract required systems. As noted in previous reports, the reduction of the backlog of submittal and RFI reviews remains as a serious issue and, although this continues to be an area of focus for the CS179 project team, only minimal progress on reducing the backlog has occurred. Discussions on ways to remedy this issue continue between MTACC-ESA senior management and LIRR management. In several of its ESA Monthly Progress Report, MTACC indicated that the contractor's ten (10) Control System Designs would be completed by December 2016; nine months later than originally scheduled. MTACC's goal to complete the final designs of the ten Control Systems by the end of 2016 did not occur, however, as several of the system designs needed to be re-submitted for further review and approval and one other system's final design had yet to be discussed in a final design review meeting. Although MTACC indicates in its January 2017 MPR that nine (9) of the Control System Final Designs are approved, the LIRR, who is the primary stakeholder of the ESA Project, has yet to formally approve any of the Control System Final Designs.**[Ref: ESA-125-Sep16]**

[**Note:** The information presented below for the CS084 contract comes from discussions at a mid-March 2017 Progress Meeting that reviewed contract progress for February 2017 and from the MTACC's January 2017 ESA Monthly Progress Report (MPR)]

The CS084 contractor continued to transmit contractual submittals and substation design documents. As noted in previous PMOC reports, the contractor continues to assert that previous delays related to design submittals were caused by MTA and have impacted its ability to meet its own original design, procurement, fabrication, and installation schedules. Several months ago, the ESA CS084 CM took measures to mitigate any potential delays associated with submittal reviews; and, a very significant improvement in reducing the backlog of submittal reviews was noted by the PMOC in December 2016. However, some additional submittal response backlog issues are re-surfacing. While the MTACC notes in its January 2017 MPR that the GEC was tasked to provide direction on the minimum SCADA equipment that satisfies the requirements specified in the contract documents, the issues related to the SCADA requirements remain unresolved and a significant impediment to the timely completion of this contract. The contractor contends in its latest monthly schedule update (data date 3/1/17) that six of seven contract Milestones are delayed due to unresolved SCADA issues. Further, the contractor also continues to contend that the lack of information on the Programmable Logic Controllers (PLCs), that it needs so its substation fabricator can proceed with substation design and fabrication is causing a day-to-day delay to the C05 substation fabrication schedule. The contractor indicates that the approval of the C08 DC switchgear, an activity that already shows a delay of 287 days as of the end of February 2017, is the number one item on the contract's critical path. The contractor notes that the continuing delay in approval of the C08 DC switchgear is causing a day-to-day delay in the contract's critical path.

Observation:

The GEC and PMT continue to consistently miss many of the target dates for completion of remaining design activities on the project. These delays, in turn, push back procurement and construction completion dates. The result is that schedule float is used during procurement and is then not available during construction when it is needed to mitigate future risks. Some of the delays are caused by the requirement to add Positive Train Control to the associated systems design

and equipment, and other delays involve outside stakeholders. Additionally, the PMOC remains concerned about any potential impacts on the CS179 and CS084 contract schedules that may result from the lack of timely design decisions and the lengthy turn-around time to review and respond to contractor design submittals and contractor inquiries. The PMOC notes that ESA senior management has engaged LIRR management in actively resolving issues that have caused delays in the review and approval of contractors' designs on Contracts CS179 and CS084. The PMOC notes significant improvement on CS084, but the PMOC believes that additional improvement is needed on CS179.

Concerns and Recommendations:

MTACC needs to focus on achieving intermediate milestones in a timely fashion and work closely with the GEC to make this happen. The continual shifting of scope among various packages has made finalizing design documents and drawings extremely difficult. Additionally, MTACC management needs to more actively engage outside stakeholders such as building owners, Amtrak, and the LIRR to resolve lingering design issues. The PMOC notes ESA PMT and senior management's increased efforts to resolve contractors' systems design reviews with GEC and LIRR management; and, the significant temporary improvement to the GEC and LIRR review and approval of the CS084 designs. The PMOC recommends that the PMT develop a design milestone tracking process for the remaining design work on the project in order to more effectively manage the design effort.**[Ref: ESA-125-Sep16]**.

2.2 Procurement

As of the end of January 2017, the Total Cost Report showed total procurement activity on the project as 84.5% complete, with $8.602 billion in contracts awarded out of the $10.178 billion current reported budget.

Status:

Contract CQ033, Mid-Day Storage Yard Facility, was advertised on October 20, 2016, with bid sets available starting October 24, 2016. The Pre-Bid conference/site tour was held on November 10, 2016. This contract was an Invitation for Bid (IFB) procurement. The bid date had been extended from December 22, 2016, to January 19, 2017 and then to February 17, 2017. Four bids were opened on February 23, 2017. The current forecast date for Award and Notice-to-Proceed is April 7, 2017. Total bid advertisement delay during 2016 was six months and total bid date delay is two months. The PMOC notes that unresolved design and approval issues that continued over an extended period of time are primarily responsible for the late procurement.

The status of the remaining major near-term procurements is summarized below:

- CM015, 48th Street Entrance – Advertise April 6, 2017; Bids due on June 15, 2017. Total bid advertisement delay through 2016 and into 2017 is seven months.
- CS086, Systems Package 2-Tunnel Systems – Advertise April 20, 2017; Bids due June 21, 2017. Total bid advertisement delay through 2016 and into 2017 is twelve months.

As of the end of December 2016, all but two CS179 Contract Options (Option Nos. 4 and 5) were exercised. All the currently identified CS179 contract Options are part of the original contract work and must be exercised to successfully complete the required contract work. The schedule for exercising the remaining contract options, identified in CS179 Modification No. 18, indicates

that the last two options must be exercised by the end of 3Q2017 to meet the revised contract substantial completion date.

Concerns and Recommendations:

The lack of stability in the contracting strategy and Contract Packaging Plan (CPP) remains a concern. Scope shifts among different packages during 2016 and into 2017 have made it difficult to fully understand the impact of these changes to the overall ESA Project. The current CPP update (revision 10.2) was submitted on November 13, 2015. The PMOC continues to recommend that the ESA PMT make the effort to adhere to the current version of the CPP and minimize shifting scope for the remainder of the project.

2.3 Construction

The PMT reported in its January 2017 Monthly Progress Report that the total construction progress reached 67.8% complete vs. 72.8% planned.

Manhattan Contracts

CM005 – Manhattan South Structures:

Status: MTACC retroactively declared Substantial Completion for April 22, 2016. ESA reports the CM005 contract as a completed contract with an open status. The PMOC will discontinue reports for the CM005 contract with this monthly report.

Construction Progress: The project site was turned over to the CM007 contract in early October 2016.

Please see Appendix J for current Cost performance

Observations/Analysis: ESA reported that some items remain to be transferred to another contract for completion.

Concerns and Recommendations: MTACC and the contractor continued negotiations on close out, CPRs, and the pending transfer of work to follow-on contracts.

CM006 – Manhattan North Structures

Status: As of February 1, 2017, MTACC increased its Forecast at Completion for CM006 to $360,256,873. MTACC reported the Forecast for Substantial Completion (SC) slipped by one month to June 30, 2017, due to low production of the contractor because of insufficient staffing. Actual construction progress for January 2017 was 1.3% versus 1.5% planned. Cumulative progress through February 1, 2017, was 92.2% actual versus 95.9% planned.

Construction Progress: During March 2017, the CM006 contractor continued rehabilitation/remediation work at the 63 St. Tunnels and Structures, which included: walls, doors, conduit benches, and manholes. The contractor continued wall, slab, and arch construction at the 55th St. Vent Facility. Arch and duct bench construction also continued at the GCT 3 Crossover Cavern. Duct bench construction continued in connecting Tunnels WB3 and the 300 series Tunnels. The CM006 contractor continued concrete wall construction and door and hardware installation at the 50th St. Air Plenum. Door and hardware installation also continued at the 53rd St. Sump and various locations. Contact and chemical grouting continued at various locations.

Please see Appendix J for current Cost performance.

Observations/Analysis: The MTACC Monthly Progress Report indicates that the contractor's reduction in manpower may lead to slippage in the SC date. The contractor has increased personnel levels to progress future production.

Concerns and Recommendations: As reported previously, the PMOC observes that ESA and the contractor continued to work well together.

CM007 - GCT Station Caverns and Track

Status: As of February 1, 2017, the MTACC Forecast at Completion remained $712,311,735. The Substantial Completion date remained January 28, 2020. Actual monthly construction progress versus planned and cumulative progress through the end of the reporting month, actual versus planned, will be reported when available from MTACC.

Construction Progress: During March 2017, the contractor continued mezzanine slab and wall and upper level column construction at the East and West Caverns south back of house. The contractor also continued the following construction in the East and West Caverns: waterproofing, exterior concrete wall construction, closure wall construction, mezzanine level precast beam and panel installation; and started the installation of precast upper level beams. The precast subcontractor continued production casting of beams and panels at their upstate NY facility. Pneumatically applied concrete PAC) started and continued in the East and West Caverns for the exterior cavern walls. There were no track construction activities, as materials and installation are pending LIRR review and approval; ESA reported that the pending approval of the Resilient Tie Block (RTB) submittal has impacted the start of track installation. Demolition of the mock demonstration track remains on hold. Contact rail materials and concrete pedestals are being fabricated. The eighth monthly Construction Progress Meeting was held on March 9, 2017.

Please see Appendix J for current Cost performance.

Observations/Analysis: ESA reports that the Baseline Schedule and the Composite Schedule, that will be used to track critical interface activities between contracts CM006, CM007, and CS179, have been reviewed. In March 2017, ESA reported the CM007 contract to be 8% complete. ESA also reported that BIM (Building Information Modeling)is being used, has been helpful with the Back of House work, and will be used to assemble as-built information in addition to two-dimensional plans.

Concerns and Recommendations: At this time, the contractor and ESA appear to be working well together. ESA's upper management needs to re-double effort to resolve the RTB issue.

CM014A – GCT Concourse & Facilities Fit-Out

Status: MTACC reports that, as of February1, 2017, the forecast project cost at completion has increased to $58,297,650 from the previous $57,984,365. MTACC continues to advise that it intends to declare Substantial Completion retroactively to November 1, 2015, following negotiations with the contractor and the contractor's bonding company. However, MTACC also reports that, as of its January 2017 monthly report, there is still no agreement on this point between MTACC and the contractor. MTACC reports there was zero actual construction progress as of February 1, 2017, as the contractor has had minimum presence on site. Cumulative progress through February 1, 2017, remained 97.1% versus 100.0% planned. This has remained the same throughout 4Q2016 and 1Q2017, and indicates that there has been very little progress since June 2016, or generally, since the 6 power feeds were energized. Most activity has been centered around fixing problems and re-engaging ConEd in the repairs.

Construction Progress: Through February 1, 2017, progress in completing the remaining equipment testing continued to be very slow. This particularly continues to include SCADA programming and testing, which is only partially complete. The planned LIRR redesign of portions of the SCADA system and removal of EPO push button switches will now be added scope to CM014B. The L-4 breaker, which failed in August 2016, is now ready to be placed back online, but requires ConEd to complete the process.

Please see Appendix J for current Cost performance.

Observations/Analysis: The ongoing presence of this contractor at the site is now impacting the CM014B contractor, who requires access to some rooms. However, the CM014A electricians must have a continuous presence at the site to maintain all of the active feeds until the B30 substation is turned over to MTACC/CM014B.

Concerns and Recommendations: The PMOC is concerned that the noted equipment issues and apparent necessity to redesign portions of the SCADA system may duplicate itself with the same equipment purchased and recently installed in the B20 Substation for CM014B.

CM014B – GCT Concourse & Facilities Fit-Out

Status: MTACC reports that, through February 1, 2017, the final forecast cost at completion has increased to $482,141,505 from the previous $463,617,500. The Substantial Completion date has been further extended to June 17, 2019, from the previous January 21, 2019. The original substantial completion date was August 18, 2018. Ongoing delays impacting the substantial completion date have included late critical structural steel submittals, fabrication, and delivery, late removal of existing unforeseen obstructions by MNR, and issues with the availability of subcontractors to perform finish work in the 4 Wellways. Actual construction progress for January 2017 was 1.5% versus 2.1% planned. Cumulative progress through February 1, 2017, was 30.3% actual versus 78.5% planned.

Through March 31, 2017, Surveying in the Concourse continued and will be on-going throughout this contract.

Schedule

The contractor's monthly updates now consist of the Recovery Schedule. The MTACC forecast for substantial completion has been extended to June 2019.

Milestone #1 (Complete Terminal Management Center, Communication Room C-2 & Communication Closet CC-C5) – The milestone is complete. The purge system for the FM200 fire suppression remains. The design for it has been completed and the drawings transferred to CM014-B.

Milestone #2 (50th St; Room CR102, Tunnel Fan Control Room, Electrical Room #126 & ICC Room), June 4, 2016, now April 2017 - The Elevator #9 shaft corrective work, which has been delaying this milestone, is complete with erection of the new CMU shaft walls. The Tunnel Fan Control Room work has resumed.

Milestone #4 (Comm. Closets CC-C3, CC-C7, & Room B3265) March 5, 2017 – Construction of these rooms is underway. This milestone will be extended to May 25, 2017, due to FM200 issues. Also, a Stop Work Order is in effect for Communications Closet CC-C7 in order to increase the room size. Finish work was completed in room B3265.

Milestone #5 (44th St. Vent Building) June 4, 2017 – This milestone has been extended to December 13, 2017.

Milestone #5A (Completion of 48th St. Entrance) November 25, 2016 – This milestone delay has been extended to October 2, 2017, from the previous April 2017. There is discussion underway to possibly transfer some of this scope to the future CM015 contract.

Construction Progress:

Concourse

Stantec Repairs (repairs to existing structural columns in Madison Yard) continue throughout. Third Party Inspections continue for concrete, shotcrete, rebar, masonry, bolting, welding, and firestops. Electricians continued with grounding to columns, rough-in work in CMU walls, and installation of overhead conduit, moving from south to north in the Concourse.

Plumbers continued trenching and backfilling for underslab plumbing. Coring for penetrations and installation of drainage tile is ongoing. Installation of sprinkler 4" main, branch lines, and sprinkler heads continues.

Placement of the final concrete slab invert is approximately 80% complete throughout the Concourse. Masonry material deliveries have been made throughout the concourse and erection of walls for rooms proceeds from south to north. Painting of block walls and columns continues throughout Zone 1.

Wellways

The new work sequence has begun and the scaffolding has been removed from Wellways #1 and #2. Escalator truss assemblies for Wellway #1 have been delivered to the site. Rigging erection continues at Wellway #1. Installation of fiberglass panels continues in Wellways #3 and #4. LIRR must approve the new sizes of the alternative "Atlas" speakers.

Biltmore Connection

Electricians continue to remove and relocate existing conduit that is blocking the work on day and night shifts. Penetrations (2) through the MNR platforms on the Express Track Level have been completed between Tracks 39/40 and 41/42.

Dining Concourse Connection

Two escalator truss assembly sections have been joined on site and iron workers are on site installing rigging for the installation of the escalators.

Shaft #3

Two elevator headhouse slabs have been placed. Placement of concrete for the headhouse is ongoing. Installation of Stair #22 is ongoing.

Elevator T-01

Drilling for the Elevator #14 piston began and mobilization for elevator installation began.

44th St. Vent Building

Installation of transformers was completed. Installation of conduit at the Concourse Level is ongoing and installation of light fixtures in the stair began. MPT continues to be adjusted along E. 44th St.as utility work in the north side of 44th St. nears completion.

45th Street Cross Passageway (CPW)

Erection of CMU walls is ongoing. Drilling of the Elevator #21 piston shaft is complete.

48th Street Entrance

The abutment wall steel was installed and the load transfer began.

50th Street Vent Building

CMU erection is complete in the Elevator #9 shaft. Installation of power/feeder conduit in the Shaft is ongoing at the 1st Basement Level. Installation of light fixtures continues. Installation of Generator NGR (neutral Ground Resistor) began.

North Transfer Station

LIRR has placed a Stop Work Order on construction of the North Transfer Station, which was to be the shared trash collection and removal area for both LIRR and MNR. Both agencies have decided that they do not want the trash collection in this area anymore. A new location is being determined and will require additional design work. MTACC is deleting the North Transfer Station from Contact CM014B.

Please see Appendix J for current Cost performance.

Observations/Analysis: The PMOC observes that, at the current rate of production, MTACC will have to extend substantial completion through 2019 to complete the work.

Concerns and Recommendations: The PMOC is concerned about the significant lack of progress.

VM014 –Vertical Circulation Elements (Escalators & Elevators)

Status: MTACC reports that through February 1, 2017, the final forecast cost at completion is reduced to $45,589,023 from the previous $46,120,334. Substantial Completion remains July 1, 2020. There is no progress curve included in the report for this contract. MTACC reports that through January 2017, the contractor completed 38.8% of the work, however.

Construction Progress: During March 2017, the contractor continued with the Phase II fabrication work. Through March 31, 2017, there were 8 elevators and 7 escalators completed and either stored at the contractor's storage facility or on site. Each escalator for the wellways consists of 11 sections covering an approximate 91' rise and 200' plus length.

Specification Issues (Elevator #10): This issue involves a problem with contractor installation and maintenance of Elevator #10 in the 50th St. Vent Facility. Elevator #10 is located below the street level, in the middle of the through-street driveway (E. 49th – 50th Sts.), and was originally designed to handle trash extraction from the site to street level. The problem is that this driveway has been temporarily turned over to the CM007 contractor for their concrete slick line operations into the Caverns. The contractor's legal department won't let them proceed with this work unless MTA indemnifies them from liability if the elevator is damaged. The GEC has developed a white paper and MTACC is preparing a response to the contractor based on the white paper.

New 45th St. Node Entrance: The new conceptual plan for the escalator and elevators has been sent to the contractor for information only. The contractor's Project Manager advised that they will need a 12 to 14 month lead time to fabricate and deliver the units for this entrance.

Biltmore Room Connection: The contractor has requested confirmed field dimensions for Escalators #1 and #2 from CM014B. They have also advised that in order to stay on schedule, these escalators are currently on the production line and will be fabricated to the dimensions in the contract documents unless new information is provided. The critical dimension(s) that needs verification is the vertical rise from Biltmore room floor to the Concourse floor. The GEC has stamped the shop drawings as "Verify in the Field".

Wellways: The PMOC has previously reported on the work sequence change Wellways #1 and #2. Although both VM014 and CM014B contractors are performing the change in good faith, the VM014 Project Manager advised that there remain issues that must be resolved before a signed

agreement can be finalized. They include MTACC modification of the terms of the contract specifications, which have specific language that does not allow work on the escalators once they are installed.

Please see Appendix J for current Cost performance.

Observations/Analysis: The PMOC observes that the VM014 CCM has advised that, if the Biltmore Room escalators are taken off of the production line to wait for field dimensions, it will likely take a year to put them back in production and complete fabrication.

Concerns and Recommendations: The PMOC recommends that the contractor make early penetrations in the Biltmore Room Concourse slab to complete the necessary field dimensions.

Queens Third-Party Contracts

CQ032 Contract – Plaza Substation and Queens Structures

Status: As of February 1, 2017, the Forecast at Completion for CQ032 decreased slightly to $264,662,050. MTACC reported the Forecast for Substantial Completion (SC) slipped three months to March 31, 2017. MTACC reports actual construction progress for January 2017 was 0.1% versus 0.0% planned. MTACC reports cumulative progress through February 1, 2017, was 98.9% actual versus 100.0% planned.

Construction Progress: During March 2017, the CQ032 contractor continued miscellaneous civil site work items, continued architectural finishes and electrical work in the Yard Services Building (YSB), continued punch list activity, close-out documentation preparation, and witnessing of testing of YSB elevators by LIRR representatives. ESA reported that the work should be 99% complete at the end of March 2017, and that SC remains dependent on close-out items: documentation, training, NCRs resolution, etc. Con Ed gas hookup, connection, and meter installation remain pending, and ESA reports utility billing remains a program level issue to resolve. ESA also reported that the water remediation effort is resuming as water infiltration continues at the old Early Access Chamber (EAC) and Launch Block areas.

Observations/Analysis: ESA reported that work item scope to be transferred to other contracts has been identified and remains under negotiation for contract modification.

Concerns and Recommendations: The contractor and ESA must remain diligent to complete construction operations and contract closeout.

Please see Appendix J for current Cost performance.

CH057 Contract – Harold Structures Part 3

Status: MTACC's Forecast at Completion for CH057 decreased to $89,271,650 during January 2017 due to deletion of options which were originally included in the contract forecast. MTACC's forecast for Substantial Completion was shortened by one day to July 5, 2017. Actual construction progress for January 2017 was 4.3% versus 5.1% planned. Cumulative progress through January 31, 2017, was 72.5% actual versus 85.7% planned (based on cost incurred rather than actual construction).

Construction Progress: During March 2013, the CH057 contractor completed construction of the Tunnel D East Approach Structure and the 48-S2 retaining wall, continued LIRR MM2 Track and turnout construction at 48th St., and continued wayside electric installation throughout the project site.

Please see Appendix J for current Cost performance.

Observations and Analysis: The contractor continued its field construction during 1Q2017 without incident, although it remained slightly behind schedule.

Concerns and Recommendations: ESA and the CH057 contractor continued to work well together during 1Q2017 and construction continued at a satisfactory pace. Consequently, the PMOC has no concerns or recommendations for the CH057 contract at this time.

Contract CH057A – Part 3 Westbound Bypass

Status: MTACC's Forecast at Completion for CH057A increased to $161,846,632 during January 2017 due to the transfer of additional funds into the contract to cover future potential contract modifications because of changed field conditions and the addition of scope. Actual construction progress for January 2017 was 2.9% versus 6.8% planned. Cumulative progress through January 31, 2017, was 48.6% actual versus 58.9% planned (based on cost incurred rather than actual construction).

Construction Progress: During March 2017, the CH057A contractor completed construction of the Westbound Bypass (WBY) East Approach Structure east of Honeywell Avenue overhead bridge (to date, the contractor has not started work on that section of the East Approach Structure west of Honeywell Avenue bridge) and continued to place sidewall and invert concrete in the West Approach Structure. The contractor has not resumed mining the Westbound Bypass Tunnel under main line tracks Line 2 and Line 4 since August 2, 2016, while the ESA PMT and the contractor continue to negotiate the contractor's contended "differing site" soil condition and the contractor continues to develop design alterations to the "jacked shield" that will be acceptable to ESA and prevent the shield's previous uplift problem. During late December 2016, the contractor notified ESA that it had analyzed the structural sufficiency of the concrete slab that was installed in 2013 and found that it would not support the weight of the railroad material and ground above it for the clear span support of the "jacked shield". As a result, the contractor could not resume mining the tunnel until a satisfactory solution is found. While ESA has continued to do its "due diligence" and continued to deliberate and negotiate a resumption of mining with the contractor, nonetheless, to date, all efforts to do so have been fruitless. Total delay to tunnel mining is 8 months.

Please see Appendix J for current Cost performance.

Observations and Analysis: During the March 2017 Harold Oversight meeting, the ESA Schedule Manager indicated that WBY tunnel mining may not resume until late May 2017, at which point mining will be almost 10 months behind schedule. At the projected rate of excavation, the remaining 600 LF of tunnel will take an additional 7-1/2 months to excavate, which results in finished tunnel excavation in late 4Q2017/early 1Q2018 if mining resumes in May 2017. The PMOC notes, however, that the Westbound Bypass track is not necessary for LIRR to operate into the new GCT Terminal and is therefore not a critical component of the "ESA First" Harold completion schedule.

Observations and Recommendations: The PMOC remains concerned about when the contractor will resume mining the Westbound Bypass Tunnel, but realizes that the contractor and the ESA PMT are doing everything possible to do so. The only recommendation the PMOC can offer is that both the ESA PMT and the contractor continue to work together, persevere, make the necessary revisions, and resume mining as quickly as possible.

Systems Contracts

VH051 (Part 1) – Harold and Point Central Instrument Locations (CILs) and Harold Tower Supervisory Control System (VH051 Part 2)

Status: VH051 Part 1 and 2 are procurement packages for LIRR Communications and Signal (C&S) system equipment and apparatus for the Harold and Point Interlocking Central Instrument Locations (CILs) (Part 1) and Harold Tower Supervisory Control System (Part 2), respectively. Purchase of all materials has already been made. The Harold Tower Supervisory Control System (Part 2) is in service. To date, both the "H4" and "H3" CILs in Harold Interlocking have been placed in service. Cutovers for the "H1", "H2", "H5", "H6", and Location 30 Central Instrument Locations (CILs) are now scheduled for 2Q2018.

CS179 - Systems Package 1-Base Contract

Status: In its January 2017 Monthly Progress Report (MPR) the MTACC notes that the contract Forecast exceeds the current contract Budget, with the Forecast at $617,952,840, versus a $606,938,540 Budget. MTACC indicates this $11M variance is mainly driven by the potential contract modifications for water infiltration mitigation, as well as trough cover procurement and installation efforts. In its January 2017 MPR, MTACC shows a progress curve for the CS179 contract that presents actual contract progress as 34.9% versus a planned 63.0%; numbers that are based on actual versus projected costs, not physical construction efforts. As presented, these progress numbers continue to imply that the contract is significantly behind schedule. MTACC is continuing its evaluation of the contractor's monthly schedule updates. However, a comprehensive analysis of the contractor's schedule cannot be made until the schedule update includes an "approved" Integrated System Test Plan (ISTP) schedule and adjustments for all outstanding design and construction activities and issues. This month, MTACC advised that the contractor's ISTP schedule is approved and will be incorporated into the next monthly schedule update from the contractor. Despite the continuing, now 12-month, slippage in the completion of the Control System designs, the MTA's reported Substantial Completion (SC) date for this contract remains at July 1, 2020; an approximate seven-month delay from the original November 19, 2019, SC date. While a discussion of any potential delay to the established July 2020 SC date has not taken place at any of the monthly progress meetings attended by the PMOC, the MTACC has directed the contractor to adjust the duration of the Integrated System Testing (IST) to absorb any potential delay to the established SC date. The PMOC advised the ESA CS179 CM of its concern regarding this strategy. The MTACC also notes in its January 2017 MPR that the completion of the 19 non-control system designs is behind schedule, causing delays in the fabrication of equipment racks. As of the end of March 2017, all but two Contract Options (Option Nos. 4 and 5) were exercised. The ESA CS179 CM indicates that these remaining two contract Options will be exercised in 2017 as per the schedule identified in Contract Modification No. 18. The two previously reported Buy/Ship America issues that pose schedule risks to the successful and timely completion of this contract (HVAC units and video monitor display panels) remain as unresolved items and one additional potential Buy/Ship America issue (public address system speakers) was recently identified. The MTA is waiting for a decision on a Buy/Ship America waiver request letter for the HVAC equipment submitted to the FTA in October 2016. The waiver request letter for the video monitor display panels continues to remain under review by MTA Legal staff with no forecasted completion date for when the MTA Legal staff will complete its review. The new potential Buy/Ship America issue concerns Public Address (PA) system speakers that are no longer manufactured in the United States. An investigation into PA speakers that meet all the specification requirements has not, to this date, found a suitable speaker that will fit in the pre-fabricated mounting fixture already installed by another contractor.

Design Progress: The CS179 contractor continues to work on the design development of the various contract required systems. As noted in previous reports, the reduction of the backlog of submittal and RFI reviews remains as a serious issue and, although this continues to be an area of focus for the CS179 project team, only limited progress on reducing the backlog has occurred. Discussions on ways to remedy this issue continue between MTACC-ESA senior management and LIRR management. MTACC had previously indicated that the contractor's ten (10) Control System Designs would be completed by December 2016; nine months later than originally scheduled. MTACC's goal to complete the final designs of the ten Control Systems by the end of 2016 did not occur, however, as several of the system designs needed to be re-submitted for further review and approval and one other system's final design had yet to be discussed in a final design review meeting. Although MTACC indicates in its January 2017 MPR that nine (9) of the Control System Final Designs (FDs) are approved, the LIRR, who is the primary stake holder of the ESA Project, has yet to formally approve any of the Control System Final Designs. As of the end of March 2017, one final design remains incomplete, as the final design review meeting for the CCTV and Security Management Software System must still be held with the LIRR to determine if the design is acceptable. No date for that meeting is forecast at this time. Further, as of the end of March 2017, the LIRR has not provided any "formal" notification to MTACC that any of the Control System final designs are "accepted" or "approved". The risk here is that if the LIRR, for whatever reason, does not approve any specific Control System's final design, any equipment already procured for that particular Control System might need to be replaced to meet the LIRR requirements. In addition to the "Control" system designs, the contractor is also responsible for the design, fabrication, installation, and testing of 19 "Non-Control" systems. MTACC continues to advise in its MPRs that the contractor's progress on these non-control system designs is falling behind schedule and will cause delays to the fabrication of equipment racks. The contractor reports that most of the physical equipment for the 19 non-control systems is approved and that it is working on rack configuration and integration. However, it appears that there are some compatibility issues with equipment being supplied to the ESA Project by other contractors, and those issues are under discussion at contractor interface meetings. The contractor continues to contend that the extended FD approvals for the control and non-control systems are a result of the lack of answers to design questions by the MTA. Any further delay in the resolution of the design issues and the approval of the final designs could jeopardize the timely completion of this contract. Additionally, the contractor also continues to state that other design and coordination issues continue to cause schedule delays.

Construction Progress: During March 2017, the CS179 contractor continued various elements of work (installation of conduit, cable, fans, fire stopping, fire standpipe, etc.) at the B10; Roosevelt; Vernon; 12th St.; 39th St.; Queens Plaza; 2nd Avenue; and 63rd St. Tunnel facilities. At present, water infiltration issues at the Vernon, Roosevelt, and 29th St facilities remain a serious concern. Water infiltration remediation work at the Vernon and 29th St. facilities was unsuccessful and alternative methodologies to correct the water problem must be developed and implemented. Assembly of equipment racks in the subcontractor's off-site facility is underway. There continue to be a number of old and new Stop Work Orders (SWOs) on this contract. One SWO is related to the requirement for an Undercar Deluge System at GCT and another is related to the requirement for a transformer at 43rd Street. These two original work scope items will be deleted from the CS179 contract via a contract modification. All the remaining SWOs need to be resolved by MTACC; and, while the GEC is still working on designs and solutions to these SWOs, no dates have been forecast for the completion of the designs or the rescinding of the SWOs.

Please see Appendix J for current Cost performance.

Concerns and Recommendations: The PMOC remains concerned regarding the timely delivery and discussion of the contractor's monthly schedule updates. These schedule updates are currently not available for discussion at the monthly progress meetings. Additionally, the PMOC has significant concerns regarding the timely preparation and submission of any Buy/Ship America waiver requests for potentially non-compliant material or equipment on the CS179 contract. Extended delays in providing compliant material or equipment could have a significant impact on the timely completion of this work. The PMOC still has concerns about the water infiltration issues in the equipment rooms that are identified and whether proposed mitigation remedies will prove to be successful. Lastly, the PMOC continues to be concerned about late completion of systems' design reviews and approvals, but acknowledges recent stepped-up efforts by MTACC's senior management to identify issues and implement corrective actions.

CS084 - Traction Power System Package #4: [**Note:** The information presented for this CS084 contract comes from discussions at a mid-March 2017 Progress Meeting that reviewed contract progress for February 2017 and from the MTACC's January 2017 ESA Monthly Progress Report (MPR)

Status: In its January 2017 ESA Monthly Progress Report (MPR), MTACC reports that the Budget and Forecast for the CS084 contract remained at the $79,717,772 level previously reported. In its January 2017 MPR, the MTACC now cites a May 2020 SC date; a two-month delay from the SC date reported in its December 2016 MPR. The MTACC contends that the two-month delay in SC is due to a projected delay in the CM007 contract that impacts an Access Restraint for the CS084 contractor. In its January 2017 ESA MPR, MTACC shows a progress curve for the CS084 contract that presents actual progress as 11.6% versus a planned 66.9%; numbers that are based on actual versus projected costs, not physical construction efforts. The actual versus planned progress numbers contained in MTACC's January 2017 MPR appear to indicate that this contract is significantly behind schedule. While the contract SC date is delayed from that established at the time of award, the contractor contends that the significant variance in the actual versus planned costs is because funds have not been expended as originally projected due to delays in approving and moving forward with the substation designs and equipment. An analysis of the status of the work activities shown on the approved baseline schedule is necessary to determine the status of the progress of physical work on this contract. The PMOC previously recommended that, to make tracking of actual versus planned progress more useful as a management tool, MTACC and the contractor might want to consider modifying the MTACC's Progress Curve to reflect the current and projected progression of the contract. The contractor continues to advise that six of seven contract Milestones (Nos. 1, 2, 3, 4, 6, and 7) are delayed as a result of delays associated with the approval of substation designs and the resolution of Supervisory Control and Data Acquisition (SCADA) requirements. Additionally, the contractor continues to assert that any further delay in the issuance of the SCADA-related modifications, the delivery of the required PLC information, and the approval of the C08 substation equipment (the contract's critical path in March 2017), will result in additional schedule impacts

Design Progress:

The contractor continued with the transmission of contractual submittals and its design development of the substations. As noted in previous PMOC reports, the contractor continues to assert that previous delays in receiving comments back from MTACC on the C05 facility switchgear, the number of SCADA point sensors, PLC information, and the general C08 substation

design impacted its ability to meet its own original design, procurement, fabrication, and installation schedules. The ESA CS084 CM worked with LIRR senior management and the General Engineering Consultant (GEC) to focus on the priority of these designs; and, a very significant improvement in reducing the backlog of submittal reviews was noted in December 2016. However, some additional submittal response issues are re-surfacing. The PMOC previously reported that the LIRR and MTACC reached an agreement on the required number of SCADA sensors and that the contractor would be requested to submit a cost proposal to modify the SCADA design accordingly. In December 2016, the MTA completed the SOW related to the SCADA system changes and requested that the contractor provide a cost proposal for the work. MTACC indicated at that time that there would be two contract modifications issued to address this modified SCADA work. One modification would address the number of SCADA sensor points and the other would address additional equipment that the LIRR indicated was required. Presently, the development and execution of a contract modification related to the number of sensor points remains as an open issue and the concept of how to deal with the proposed additional equipment has changed. In its January 2017 MPR, the MTACC notes that the GEC was tasked to provide direction on the minimum SCADA equipment that satisfies the requirements specified in the contract documents. Presently, this SCADA equipment identification issue remains unresolved and a significant impediment to the timely completion of this contract. The contractor contends in its latest monthly schedule update (data date 3/1/17) that six of seven contract Milestones are delayed due to unresolved SCADA issues; several between 300 and 400 days. Further, the contractor also continues to contend that the lack of information on the Programmable Logic Controllers (PLCs), that it needs so its substation fabricator can proceed with substation design and fabrication, is causing a day-to-day delay to the C05 substation fabrication schedule. The contractor indicates that it will submit a Time Impact Analysis (TIA) related to the SCADA issues, as it contends that the lack of clarity on SCADA has caused delays to its contract schedule. Previously, the GEC completed work on design changes and CPRs were issued to address the penetration to the track level and room beam height issues at the Vernon (C05) facility. The contractor noted that it was still waiting for responses to RFIs on the designs before it could submit proposals related to the work. Implementation of these design changes must be negotiated with the CS179 contractor and progressed before the CS084 contractor begins work in the C05 facility. The contractor indicates that the approval of the C08 DC switchgear, an activity that already shows a delay of 287 days as of the end of February 2017, is the number one item on the contract's critical path. The contractor notes that the continuing delay in approval of the C08 DC switchgear is causing a day-to-day delay in the contract's critical path. The PMOC continues to have concerns about the length of time it is taking to provide responses and designs to resolve the various issues. MTACC needs to prioritize with the GEC and the LIRR the process to provide timely submittal responses and designs so as to preclude any further delays to the contract.

Construction Progress: As previously reported, the contractor finished all of the extra L3 electrical service work in November 2016 and turned the service over to the MTA. The LIRR has yet to fully use the service to energize all its signal huts because there is some additional work (the installation of panel heaters and lightning arrestors), identified in November 2016, that must take place. MTACC must still develop and negotiate a contract change to have the contractor perform this extra work. Other than the contractor performing site surveys and meeting with other contractors on coordination issues, there is no active on-site construction work taking place at this time on the CS084 contract. Water infiltration issues in equipment rooms continue to impact the start of construction efforts and the timely completion of the contract work. The most significant

of these water infiltration issues is the one in the Vernon (C05) Traction power Substation (TPSS) room. The MTA and its various ESA contractors have now tried several methods to mitigate the water infiltration in this room and have, to this date, not found a successful permanent solution. The GEC will now have to devise another method to eliminate the water infiltration into the room; further impacting the CS084 contractor's ability to access the TPSS and perform the contract work. MTACC continues to advise the contractor that the water infiltration issue in the C05 TPSS room will be resolved in a timely manner and in advance of the CS084 contractor's delivery of equipment; to which, the contractor cites this access restraint as one more item impacting its ability to meet its contract schedule. The PMOC believes MTACC is being overly optimistic in stating that this water infiltration issue at the C05 facility will be successfully resolved in a timely manner. There have now been two unsuccessful attempts at mitigating the water infiltration and the GEC must now devise a third method to correct the problem. Further, once a third method is identified, MTACC must issue a contract modification to the CS179 contractor to perform the remediation work and then, after completion of the work, a period of time will be needed to ascertain if the remediation is successful. No time frame for development and progression of this alternate mitigation methodology, or for a testing period to determine if the new methodology is successful, has been determined at this time. In its October 2016 and December 2016 ESA MPRs, MTACC indicates that a transfer of construction work scope from this contract to either the CH058A or the CS179 contract is being considered to address the installation of positive and negative DC traction power cabling for the C08 substation. The contract calls for this cabling, which is necessary to perform the testing of the C08 substation and the integrated and dynamic testing of all the CS084 substations, to be installed in MTA-provided ductwork between the C08 substation and the track. Because procurement efforts on other ESA contracts were delayed, the CS084 contract schedule now calls for the testing to be performed before the ductwork is installed under any other contract; thus the consideration to transfer the cable installation and substation testing to another contract that will still be active once the ductwork is installed. Based on information gathered at the mid-March 2017 CS084 Monthly progress meeting, MTACC is currently considering not only the transfer of this one substation's (C08) testing, but also the integrated substation testing for all the substations installed by the CS084 contractor. This would, in effect, allow the MTACC to declare SC for the CS084 contract and release the CS084 contractor from the further participation in the ESA project. The PMOC notes that should the "live load" (dynamic) testing of the C08 substation and, consequently, the contractually required integrated live load testing of all the CS084 substations be transferred to another contract, work performance accountability issues could arise if test results are other than satisfactory. While this plan for testing is not mentioned in the MTACC's January 2017 MPR, it is still a significant issue that must be addressed quickly, as the critical path of this contract goes through the completion of the C08 substation and any adjustment to the work scope for this substation will have a notable impact on the contract schedule. The PMOC's concern and a recommendation on addressing the concern are noted below.

Please see Appendix J for current Cost performance.

Concerns and Recommendations: The PMOC encourages MTACC's senior management to continue to work with LIRR's senior management to ensure the timely completion of design reviews and approvals to prevent potential delays to the completion of the contract work. MTACC should prioritize the delivery of requested design information related to the PLCs, the approval of substation switchgear equipment, and the execution of SCADA-related contract modifications so as to preclude any further impact to substation design and fabrication. In regard to the "live load" (dynamic) testing of C08 substation and the integrated testing of all the CS084 substations, the

PMOC is concerned that if any of the testing produces unsatisfactory results once the current CS084 contractor is no longer active on the ESA project, then the project is subject to a "finger-pointing" exercise to determine which contractor is at fault for the unsatisfactory results. The PMOC suggested to the ESA CS084 CM that the MTA might want to consider transferring the installation of the ductwork to another contractor, while leaving the requirement for the installation and testing of the cable and substations under the CS084 contract. This could be accomplished by temporarily "de-mobilizing" the CS084 contract for a short period of time and then "re-mobilizing" the CS084 contractor to perform all the testing. That way, any issues or problems that might surface during the testing period are still the responsibility of the CS084 contractor, eliminating any "finger-pointing" between multiple contractors.

VS086 – Systems Package 3 – Signal Equipment Procurement

Status: In its January 2017 ESA Monthly Progress Report, MTACC indicates that both the Forecast and Budget for this contract is at $21,835,022. While the forecasted SC date remains the same as that established at contract award (October 14, 2019), five interim contract milestones continue to show delays of anywhere from 12 to 23 months. The MTACC indicates in its report that it is currently in discussions with the contractor to re-establish interim milestone dates. However, the PMOC notes that there are several other unresolved design issues, which have the potential to impact the contract completion date, that are not being considered yet in the adjustment of the interim milestones. The continued absence of an accurate and comprehensive schedule that shows all contemplated contract activities is an impediment to the MTACC's ability to effectively manage this contract.

Design Progress: As has been observed on other ESA Systems contracts being managed by MTACC, the contractor is raising concerns over the timeliness of responses from the MTA on design submittals and inquiries. The contractor indicates that the design of the Plaza Interlocking Central Control Room, a design that is now on the contract's critical path, is being delayed on a day-to-day basis waiting for the MTA to provide software that is being provided under the CS179 contract. The delay in this critical design, already five months late, is also causing delays to software designs for other CS086 contract locations and the First Article Testing (FAT) and delivery of equipment. Further, there are several other design issues that require a timely resolution or direction from the MTA. These other design issues, including the use of specialized track circuits and a possible contract change to replace incandescent lights in the signal units with Light Emitting Diodes (LEDs) could pose significant delays to the completion of the signal designs.

Please see Appendix J for current Cost performance.

Concerns and Recommendations: The PMOC is concerned that there is no accurate and comprehensive schedule in place that would allow MTACC to effectively manage this contract and encourages MTACC to quickly complete discussions regarding the development of such a schedule that addresses all the issues currently identified on this contract. Also, the PMOC encourages the new MTACC management team on this contract to work with the LIRR and the GEC to provide timely answers and comments to design questions and submittals.

Harold Stage I Amtrak FA (FHA01)

Status: MTACC's Forecast at Completion for FHA01 was reduced slightly during January 2017 to $18,596,949. MTACC's forecast for Substantial Completion remained at July 6, 2017. Actual construction progress for January 2017 was 0.0% versus 0.0% planned. Cumulative progress

through January 31, 2017, was 98.9% actual versus 100.0% planned (based on cost incurred rather than actual construction progress).

Construction Progress: Amtrak did not perform any significant FHA01 construction during March 2017.

Please see Appendix J for current Cost performance.

Observations and Analysis: As a result of the adoption of the "ESA First" construction schedule, MTACC has de-emphasized its previous program of construction by "stages". Consequently, the remaining former Stage 1 construction elements and their respective priorities are inter-mingled with other stages.

Concerns and Recommendations: The PMOC has no concerns or recommendations for FHA01 construction at this time.

Harold Early Stage 2 Amtrak FA (FHA02)

Status: MTACC's Forecast at Completion for FHA02 increased to $66,440,848 during January 2017 due to MTACC's need to extend contract construction because of limited resources and track outage availability. The MTACC forecast for Substantial Completion remained at May 20, 2018. Actual construction progress for January 2017 was 0.2% versus 0.0% planned. Cumulative progress through January 31, 2017, was 85.6% actual versus 81.0% planned (based on cost incurred rather than actual construction progress).

Construction Progress: During March 2017, Amtrak Electric Traction (ET) personnel completed installation of overhead catenary assemblies over the new RPR (Relocated Primary Route) Track and placed it in service for AC train operation. Additionally, Amtrak ET personnel began to install catenary assemblies over the existing #825 turnout and installed a ground wire on new Signal Bridge #11. Amtrak C&S personnel began installation of signal conduit along NH #1 (New Haven #1) Track between 48th St. and Gate Interlocking.

Please see Appendix J for current Cost performance.

Observations and Analysis: The PMOC continues to believe that ESA's re-scheduling of the Amtrak former Stage 2 construction activities will not have an impact on the overall completion of the remaining Harold work.

Concerns and Recommendations: The PMOC has no concerns or recommendations about former Amtrak Stage 2 work at this time.

Loop Interlocking CIL Amtrak FQA65

Status: MTACC's Forecast at Completion for FQA65 remained at $33,287,863 during January 2017. The MTACC forecast for Substantial Completion remained at July 16, 2023. Actual construction progress for January 2017 was 0.0% versus 4.9% planned. Cumulative progress through January 31, 2017, was 17.0% actual versus 73.7% planned (based on cost incurred rather than actual construction progress). The PMOC is not concerned about this discrepancy due to the "hold" that MTACC put on FQA65 construction in early 2016 and the extended Substantial Completion date.

Construction Progress: During March 2017, Amtrak C&S personnel installed signal hardware and cable along the Loop Tracks between the F2J and Location A signal huts.

Please see Appendix J for current Cost performance.

Observations and Analysis: FQA65 construction is not a necessary component of the "ESA First" program. MTACC has therefore downgraded its priority and extended its schedule.

Concerns and Recommendations: The PMOC has no concerns or recommendations for FQA65 at this time.

Harold Stage 1 LIRR FA (FHL01)

Status: MTACC's Forecast at Completion for FHL01 remained at $24,379,363 during January 2017. The MTACC forecast for Substantial Completion was extended by one day to August 1, 2017. Actual construction progress for January 2017 was 2.2% versus 0.0% planned. Cumulative progress through January 31, 2017, was 91.9% actual versus 100.0% planned (based on cost incurred rather than actual construction progress).

Construction Progress: During March 2017, LIRR 3rd Rail personnel continued to install traction power conduits at the "H1" CIL, the #10 and #11 circuit breakers, and the R2, R3, and R6 reactors (for drainage cables to prevent stray current from travelling between circuits).

Please see Appendix J for current Cost performance.

Observations and Analysis: The 3rd rail work done during March 2017 was LIRR electric traction work that is necessary to place the "H1" CIL in service, which is scheduled for May 2018.

Concerns and Recommendations: The PMOC remains concerned that, because of MTACC's present emphasis on former Stage 2 and Stage 3 construction, remaining Stage 1 work could be left incomplete until the end of the project. The PMOC believes that work not done when scheduled will tend to accumulate and may eventually delay the project's RSD further. The PMOC recommends that the ESA PMT monitor incomplete or unstarted tasks, develop a master list of critical ones, and develop a plan to address all of them well before the RSD date approaches.

Harold Early Stage 2 LIRR FA (FHL02)

Status: MTACC's Forecast at Completion for FHL02 decreased to $84,417,099 during January 2017, although MTACC offered no explanation for the decrease. The MTACC forecast for Substantial Completion remained at April 15, 2020. Actual construction progress for January 2017 was 1.0% versus 0.0% planned. Cumulative progress through January 31, 2017, was 92.5% actual versus 100.0% planned (based on cost incurred rather than actual construction progress).

Construction Progress: During March 2017, LIRR Signal personnel began the signal pre-test sequence scheduled to culminate in the cutovers of the "H1", "H2", "H5", "H6", and Location 30 CILs in May 2018. Additionally, signal personnel continued to make several different signal revisions at numerous Harold and Woodside locations, pulled signal cables from the "H1" CIL to "H1" turnout locations, installed signal and snow melter conduits at "H1", "H3", "H6", and circuit breakers #10 and #11, and installed the 91.6Hz signal power separation cable at the "H6" CIL. LIRR High Tension personnel pulled the #134 and #135 circuit signal power separation cables between Tower #28 and the 39th St. bridge and installed lightning arrestors, pot heads, and bonding and grounding cables at the new G03 Substation.

Please see Appendix J for current Cost performance.

Observations and Analysis: LIRR and ESA developed a new preliminary work sequence which made it possible for the LIRR Signal Department to begin its test procedure for the 2018 CIL cutovers earlier than if the parties had waited for completion of the signal power separation construction, as originally planned. [redacted] Based on this,

the PMOC believes that, barring unforeseen major setbacks, LIRR could be in a position to begin the final cutovers of the "H1", "H2", "H5", "H6", and Location 30 CILs in early May 2018, as scheduled.

Concerns and Recommendations: The PMOC remains concerned that LIRR Stage 2 work may not be completed on schedule and will continue to accumulate along with leftover former Stage 1 and Stage 3 work if the LIRR does not pursue its portion of ESA construction more aggressively. The PMOC recommends that LIRR develop more aggressive Track and Electric Traction programs in future years and that it develop a master list of incomplete or unstarted tasks to ensure that all critical items needed for RSD are properly addressed.

2.4 Operational Readiness

Status: While no Quarterly Operational Readiness (OR) briefings were held during 1Q2017, the PMOC continues to be in contact with the Operational Readiness (OR) staff to gather information on the progress of the 11 OR Task Working Groups (TWGs). In preparation for the next Quarterly OR meeting that will be held in April 2017, the PMOC was advised that the vacancy on Task Working Groups (TWG) No. 7, the TWG responsible for Safety and Security certifications and other Safety/Security-related items, that was created when the original leader of that TWG left the ESA Project in mid-January, has been filled. As noted in previous PMOC reports, a substantial amount of work related to the completion of Safety and Security reviews of the various ESA contracts needs to still be accomplished to eventually provide the required Safety and Security Certifications of the Project's design and construction phases. The PMOC advised the OR staff that the previously requested schedules showing the completion of safety and security reviews and the completion of safety and security certifications needs to be a topic for discussion.

Observation: The PMOC notes that interim meetings with the Operational Readiness staff provide the PMOC with the general status of the progress of all the TWGs; and, when necessary, the meetings can focus on specific aspects of the TWG products (e.g., safety and security certifications, fleet readiness, and LIRR staffing and training requirements).

Concerns and Recommendations: The PMOC remains very concerned that the development and implementation of the Safety and Security Certification processes is still not finalized at this point in the life of the ESA Project. The PMOC recommends that MTACC take measures to ensure that safety and security requirements are identified and addressed in a timely manner.

2.5 Vehicles

Status:

The LIRR Vehicle Procurement Schedule for the M-9 (non-federal) and M-9A (federal) vehicles indicates that the RFP for the M-9A vehicles was supposed to be issued in November 2016 (the initial target date was April 2016). As of March 31, 2017, however, the RFP had not been issued and was still under development by the LIRR. The current target date to issue the "Qualifications" portion of the RFP is June 2017 with the "Cost/Technical" portion to follow in September 2017. Additionally, the PMOC notes that LIRR has developed two different schedules for the M-9A delivery – one for a scenario in which the present M-9 supplier wins the procurement and the other in case a different supplier wins. If the present M-9 supplier wins, the schedule indicates that delivery of the M-9A vehicles will begin in April 2021 and last through May 2022. If another supplier wins, the procurement schedule indicates that deliveries will be between November 2021 and December 2022 (a seven month time lag between the two suppliers).

Observations and Analysis: In addition to completion of the contract documents, LIRR must receive MTA approval to issue the RFP. If this occurs during 2Q2017, as presently planned, cumulative delay to the original procurement of the M-9A will be approximately 13 months. If it does not, delay will be even longer.

Concerns and Recommendations: Although M-9A vehicle delivery is not required to begin until April 2021, nonetheless the PMOC remains concerned about the continued slippage in the procurement package development, which is now at least 13 months later than originally scheduled. The PMOC is concerned that, with the MTA's historical procurement record, the package could slip even further behind, possibly to the point of becoming the project critical path. The PMOC recommends that the LIRR complete development of the contract documents as soon as possible and concurrently solicit MTA's approval to issue the RFP.

2.6 Property Acquisition and Real Estate

Status/Observations:

As discussed in "Real Estate Acquisitions", Section 3.b, above, during January 2017, MTA Real Estate successfully completed negotiations with the owners of 335 Madison Avenue to secure easement use of elevators and over 50 other items of work and continued to progress easement, property, and work agreements with 415 Madison Avenue and Amtrak for accesses needed to construct the ESA project.

Observations and Analysis: MTA Real Estate continues to perform its real estate responsibilities on behalf of the ESA Project in an entirely effective manner.

Concerns and Recommendations: The PMOC has no concerns or recommendations for MTA Real Estate at this time.

2.7 Community Relations

Status:

The January 2017 ESA Monthly Report indicates that ESA Community Relations efforts for the month were focused on gathering information to advise the public of future construction in the Biltmore Room in existing Grand Central Terminal as well as the temporary service removal of the 48th St. ADA elevator.

Observations and Analysis: The PMOC believes that the MTACC Community Relations Staff continues to perform its outreach campaign in an entirely effective manner.

Concerns and Recommendations: The PMOC has no concerns about ESA community relations at this time and recommends that the ESA Community Relations staff continue to perform its duties in the same manner as it has in the past.

3.0 PROJECT MANAGEMENT PLAN AND SUB PLANS

Status:

MTACC submitted PMP Rev. 10 to the FTA and PMOC on July 18, 2014. This revision incorporates changes stemming from FTA/PMOC comments on PMP Rev. 9.0, provided in December 2013, as well as changes that resulted from the MTACC's Candidate Revision process. Based on working meetings, dialogue, and additional clarifying review comments from the PMOC, MTACC made additional changes to the PMP and submitted an updated Rev. 10 on September 18, 2014. The PMOC completed its review and evaluation of MTACC's revisions and responses and submitted its findings to FTA-RII in 4Q2014. MTACC subsequently submitted a revised Rev. 10 on March 13, 2015, that included updated information on the Change Control Committee. The PMOC coordinated with MTACC to arrange a series of working meetings through the remainder of 2015 with ESA chapter authors and the corresponding PMOC reviewers to resolve outstanding FTA/PMOC evaluation comments. Through 2016, MTACC and the PMOC continued working together to complete this process and to coordinate the reviews of the revised SMP and CMP Sub-Plans with associated sections of the PMP. MTACC submitted the next revision to the PMP in June 2016 that reflected ESA organizational changes along with some additional updates and revisions to certain sections. The PMOC is currently nearing completion of its evaluation and expects to issue the results in April 2017.

Observation: The PMOC is continues to work with MTACC to resolve the remaining issues, mostly minor, with the PMP, and will follow up with the FTA in finalizing responses.

Concerns and Recommendations: There are no major concerns at this time.

3.1 PMP Sub-Plans

Status:

The status of the key PMP sub-plans is also discussed in the ELPEP Compliance Section of this report. MTACC issued updates to its TCC and Cost Management Plans in June 2015. The PMOC provided the FTA with its evaluation of the MTACC responses to the PMOC review comments on both the TCC and the CMP and recommended meeting with MTACC to resolve remaining issues. The FTA subsequently provided MTACC with the TCC and CMP evaluations for their review and action. MTACC responded with a reply for the TCC on September 24, 2015.

MTACC submitted its revised Cost Management Plan (ESA and SAS) on April 13, 2015. The PMOC returned comments to the FTA on May 8, 2015. The MTACC submitted a revised CMP in response to FTA/PMOC comments on June 30, 2015. In August 2015, the PMOC provided the FTA with its evaluation of the MTACC responses to the PMOC review comments and met with MTACC on November 16, 2015. MTACC is working on additional agreed-upon revisions and is evaluating the PMOC's recommendations in six areas. MTACC issued an interim revision update in December 2015 and the PMOC completed its review during 2Q2016. MTACC and the PMOC met on June 22, 2016, to review the PMOC comments. During October 2016, MTACC submitted the completed review comment matrix and a revised CMP. The PMOC has completed its evaluation, concluded that the CMP is acceptable and provided the FTA with the comment close-out details in November 2016. The FTA subsequently notified MTACC that the revised CMP is acceptable.

MTACC issued its revised Schedule Management Plan (SMP), which now includes both the ESA and SAS projects, on October 26, 2015. The PMOC completed its review during 2Q2016. Review

comments were forwarded to MTACC on July 15, 2016, and a working meeting was held on August 25, 2016, to review, discuss, and resolve the comments. MTACC has followed up with the agreed upon revisions to the SMP and has completed their responses in the review comment matrix. During October 2016, MTACC submitted the completed review comment matrix and a revised SMP. The PMOC has completed its evaluation, found no significant issues, and provided its findings to the FTA in November 2015, which the FTA subsequently forwarded to MTACC. MTACC is preparing responses to the remaining open items. At the November 2016 Cost and Schedule meeting, the MTACC agreed to provide the PMOC with the documents that the PMOC requested in its evaluation of the SMP. In January 2017, MTACC submitted additional documents to the FTA and the PMOC in response to the remaining comments. The PMOC has now completed its evaluation, concluded that the CMP is acceptable and provided the FTA with the comment close-out details in March 2017.

Observations:

MTACC has revised its TCC Plan, Cost Management Plan, and its Schedule Management Plan. MTACC plans to update the Risk Management Plan during 1Q2017.

Concerns and Recommendations:

MTACC needs to ensure that the proper candidate revisions are prepared and presented to the CCC for approval before any changes are incorporated into these plans.

3.2 Project Procedures

Status: Revisions to the CMP and SMP may require updates to the referenced Project Procedures. The PMOC will evaluate the need for any required updates to the Project Procedures in conjunction with the effort to close out all remaining comments on the CMP and SMP.

Observations: None

Concerns and Recommendations: There are no significant concerns at this time.

4.0 PROJECT SCHEDULE

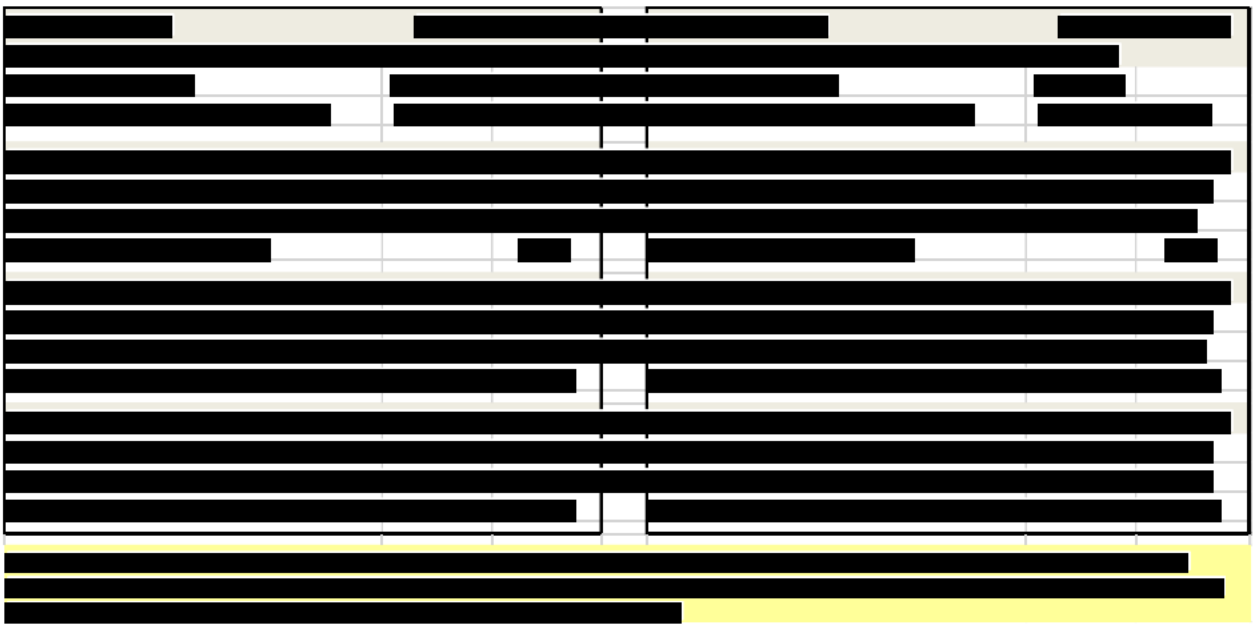
4.1 Integrated Project Schedule

Status:

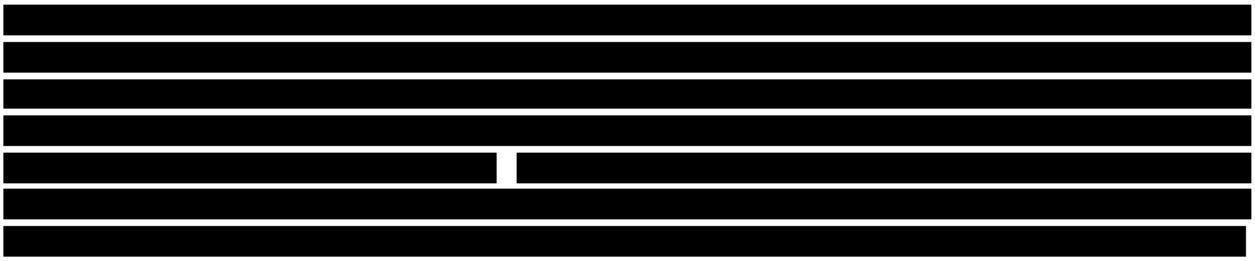
This report is based on the submitted ESA IPS file entitled "BR09-UPDT90-02-2017-FINAL" which has a data date of February 1, 2017, and incorporates progress over the month of January 2017 (February 1, 2017 IPS). The IPS and its associated report track two different Revenue Service Date (RSD) milestones – the Target RSD and the Late RSD, which the PMT now also refers to as the Public Date. As of the February 1, 2017 IPS, ESA reports that the Target RSD of February 12, 2021, and the Late RSD of December 13, 2022, have remained unchanged since the previous update. [redacted]

The February 1, 2017 IPS included a new project-level area for Queens. Therefore, the PMT now considers and reports on three areas with respect to the IPS – Harold, Queens, and Manhattan/Systems. [redacted]

[redacted]



[redacted]



Over the previous quarter, the forecasted start of CIL pre-cutover testing has remained relatively unchanged. As of the November 1, 2016 IPS, it was reported that the start of Harold CIL cutover pre-testing would begin on February 20, 2017. As of the February 1, 2017 IPS, this Program-critical work is now forecasted to begin on February 24, 2017. This work is planned to control the Program's Critical Path for a long time, with an expected completion of CILs H1/H2/H5/H6/Loc 30 on May 19, 2018. A more detailed analysis of the progress made along the Program's Critical Path are in Section 4.3 of this report. Below is a summary of the work that the February 1, 2017 IPS Program's Critical Path is reported to go through, leading to the Late RSD of December 13, 2022:

- FHL02 – Fabrication and Installation of the Power Case Transformer Hatch; Transformer Installation; Implementation of Cut-over sequencing plans (phases 0, I, and II); and H5/H6/Loc 30 and H1/H2/Loc 30 CIL Cutover Pre-testing and Cutovers;
- CH057D – Northeast Quadrant work;
- FHL04 – Catenary work;
- CH058/CH058A – Civil work on the B/C Approach Structure;
- FHL04 – Testing and Cutover work;
- Train Contract Staffing and LIRR Final 3 Months Period;

- Target RSD;
- [redacted] and,
- Late RSD.

Observations, Analysis, and Concerns:

The PMOC continues to note the following observations and concerns resulting from its analysis of the ESA IPS Updates over the last quarter,

1. The PMOC has observed delays to many of the CS179 forecasted milestones. However, the PMT reports that the start of integrated systems testing and CS179 substantial completion date has not been impacted.
2. The PMOC has observed a lack of progress along the Program's Critical Path, combined with major schedule revisions to the path of work to signal power separation at Harold. Almost three months of critical work, previously planned to occur between the installation of a transformer and achieving signal power separation (implementing cut-over sequencing plan phases I-III), has been removed from the IPS. The PMOC is concerned with such a large portion of the critical path being removed from the IPS without explanation in the associated IPS Report. This is discussed in more detail in Section 4.3 of this report.

[redacted]

4.2 180-Day Look-Ahead of Important Activities

Table F-2 in Appendix F shows a contract specific 180-day Look-Ahead, which reports milestones and significant activities that are forecasted to occur in the next 180 days for all contracts. Table 4.2 below is a list of upcoming Contract procurement milestones forecasted to occur in the next two quarters as reported by the PMT.

TABLE 4.2 – 3Q2017 and 4Q2017 Upcoming Contract Procurement Milestones

Contract Description	Advertise Date	Bid Date	NTP	Project Period	Substantial Completion
CM015 48th Street Entrance	3/14/2017	5/23/2017	6/30/2017	33 Months	4/1/2020
CQ033 Mid-Day Storage Yard	10/20/2016A	2/23/2017	3/24/2017	40 Months	7/22/2020
CH061A Tunnel A	5/23/2016A	8/2/2016A	1/27/2017A	16 Months	5/28/2018
CS086 Systems Package 2: Signal	3/9/2017	5/9/2017	6/7/2017	37 Months	7/1/2020
QMP-1 Civil/Neighborhood Beautification	10/20/2016A	1/5/2017A	3/2/2017	10 Months	12/21/2017
QMP-2 Lighting/CCTV Security	7/11/2017	8/22/2017	9/22/2017	9 Months	7/2/2018

Over the previous quarter, the forecasted CQ033 Bid Due Date was delayed approximately two months, from December 22, 2016, to February 23, 2017. The planned NTP date moved from February 22 to March 24, 2017, and the planned Substantial Completion date moved from June 22 to July 22, 2020. It was reported that bids were opened on February 27, 2017, five days later than forecasted, as of February 1, 2017.

The planned Advertise Date for the CM015: 48th Street Entrance contract continues to experience delays, moving from January 5 to March 14, 2017. This represents a delay of over three months (105 calendar days) over the previous six months (the August 1, 2016 IPS forecasted this contract to be advertised on November 29, 2016). The forecasted Bid Due and NTP dates moved out correspondingly. However, the expected project period was increased from 30 months to 33 months. Therefore, the planned Substantial Completion date was delayed significantly over the previous quarter, from October 18, 2019, to April 1, 2020, or approximately five and a half months.

The forecasted procurement milestone dates for CS086 have changed over the previous quarter. The planned Advertise Date moved from January 10 to March 9, 2017, and the planned Bid Due date moved by the same amount. The planned NTP date moved from May 8 to June 7, 2017, and the planned time between the Bid Due date and NTP was cut in half from two months to one

month. The expected project period was also reduced by a month, from 38 to 37 months. As a result of these two revisions, the planned Substantial Completion date for CS086 remained unchanged over the previous quarter, at July 1, 2020.

Over the previous quarter, NTP was given for CH061A as planned on January 27, 2017. The February 1, 2017 IPS shows no change to the forecasted Substantial Completion date for CH061A, at May 28, 2018.

The PMOC is concerned about the revisions to the planned duration of contracts such as CS086. The time between the Bid Due date and NTP was reduced by half (from two months to one month) without any explanation in the narrative of the IPS Report. The planned contract duration was also decreased by one month. This net effect offset the delays to procurement, resulting in no change to the forecasted Substantial Completion date. While it is beneficial to mitigate delays, the revision of important planned dates and durations should be based on analysis and supporting documentation and be addressed in the IPS Report to ensure it isn't merely a Band-Aid.

4.3 Critical Path Activities

The following table summarizes the contracts and key dates along the ESA Program's remaining Critical Path, as reported by the PMT in its February 1, 2017 IPS Report.

TABLE 4.3 – February 1, 2017 IPS ESA Program –Remaining Critical Path

Activity Name	Original Duration	Start	Finish
FHL02 CIL Cutover Work	473	01-Feb-17	20-May-18
CH057D Northeast Quadrant Work and FHA/L03 Catenary Work	116	21-May-18	14-Sep-18
FHA/L04 Switch work and FHL02 Retire Harold CIL	70	17-Sep-18	26-Nov-18
CH058 and CH058A B/C Approach work	638	26-Nov-18	25-Aug-20
FHL04 Testing and Cutover LK1, U1, LK2, R1/R2 (1143) 4C	49	26-Aug-20	14-Oct-20
Train Contract Staffs LIRR & LIRR Final 3 Months Period	119	15-Oct-20	11-Feb-21
Target Revenue Service Date			**12-Feb-21**
[redacted]	[redacted]	[redacted]	[redacted]
Late Revenue Service Date			**13-Dec-22**

Note: The PMT no longer tracks an Early RSD milestone.

The PMOC has tracked and analyzed progress along the ESA Program's Critical Path over the last quarter. The PMT continues to report over the previous quarter that the CIL Cutover work at Harold Interlocking controls the Program's Critical Path from now until May of 2018. In previous IPS updates, during the majority of that time there was only one activity representing the CIL cutover pre-testing which was related to the cutover of H1/H2/H5/H6/Loc30. However, the February 1, 2017 IPS added more detail to this critical work, breaking it out into eight discrete portions of work, as follows:

1. Input / Output Predecessor Tests
2. H5/H6/L30 TSR Pre-cutover Testing
3. H5/H6/L30 South Pre-cutover Testing
4. H1/H2/H5/H6/L30 TSR Testing
5. H1/H2/L30 TSR Testing
6. H1/H2/L30 North Pre-cutover Testing

7. Days Lost/Weekend Work

[redacted]

While the one former activity that represented critical CIL cutover pre-testing was replaced with eight activities, the duration for this work remained unchanged at 309 work days, or approximately 437 calendar days. The PMOC remains concerned with the need to track this work aggressively and compare actual progress to planned progress, analyzing productivity and expected completion dates. [redacted] The PMOC also recommends a corrective action plan in case the work begins to slip in order to be better prepared to mitigate potential impacts from delays.

Over the previous quarter, ESA has reported that two different paths of work are controlling the start of the Critical Harold CIL cutover pre-testing: ARINC workstation screenshots; and the completion of signal power separation for cutover pre-testing. The predecessor work to CIL cutover pre-testing varied throughout the quarter's IPS updates as follows:

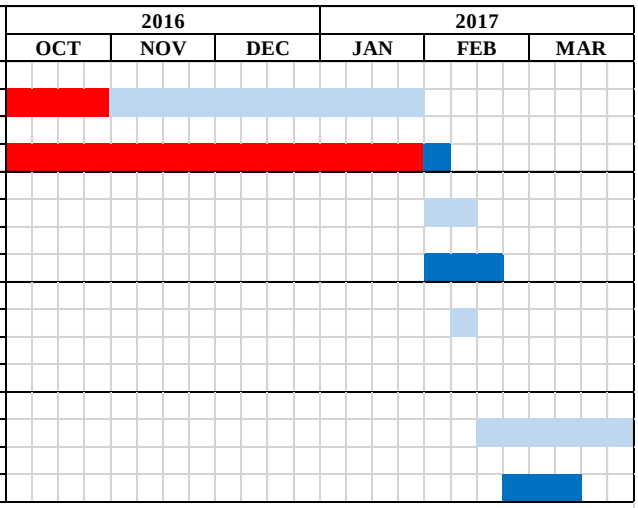
- December 1, 2016 IPS: ARINC Screenshots
- January 1, 2017 IPS: Signal Power Separation
- February 1, 2017 IPS: ARINC Screenshots

Both of these paths have experienced delays over the previous quarter, as shown below. The light blue bars show the planned progress along these paths as of the December 1, 2016 IPS, the red bars show actual progress made up to each IPS data date, and the dark blue bars show the planned work as of the February 1, 2017 IPS. Please note these are simplified diagrams for the purpose of presentation showing the driving activities only, i.e. there are more predecessor and successor relationships besides what are shown. Also, note that the activity IDs, descriptions, and paths of work are from the February 1, 2017 IPS and any changes between that update and the December 1, 2016 IPS update are noted below each figure and within the report text.

Path to Completion of ARINC Screenshots

Below is the diagram showing the path of work that was reported as critical in the December 1, 2016 and February 1, 2017 IPS updates.

Path through ARINC Software	IPS	Start	Finish
FHL02-CSR1180: H5/H6/L30 Arinc Resequencing screen shot changes	1-Nov	10/29/2016 A	1/31/2017
	1-Feb	10/29/2016 A	2/1/2017
FHL02-CSR210: Arinc Resequencing screen shots on site installation/Test/Resolve issues	1-Nov	2/1/2017	2/17/2017
	1-Feb	2/2/2017	2/24/2017
FHL02-CSR290: Ready to start testing / Revision	1-Nov	-	2/17/2017
	1-Feb	-	2/24/2017
FHL02-CSR1220: Input/Output Processor Tests*	1-Nov	2/20/2017	5/4/2018
	1-Feb	2/27/2017	3/10/2017



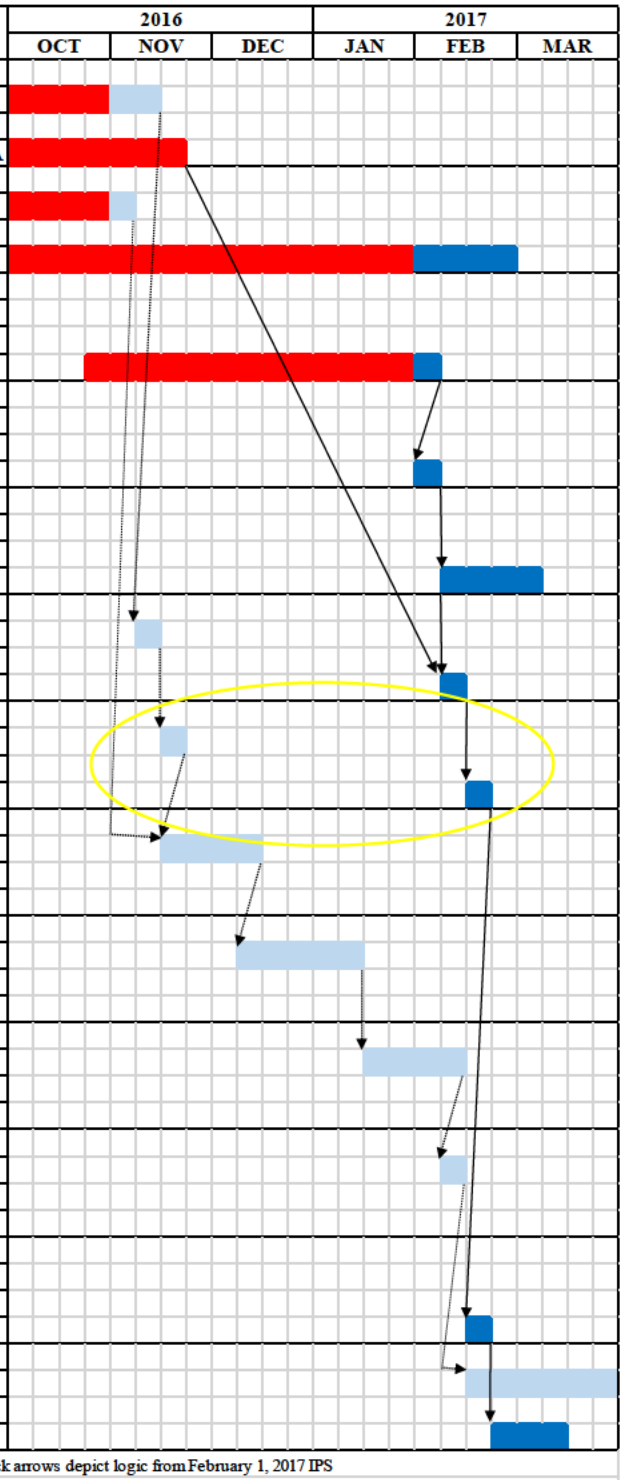
*Activity description from February 1, 2017 IPS Previous to the February1, 2017 IPS, this was FHL02-CSR1160: Pre-Testing - H1/H2/H5/H6/Loc 30

Over the previous quarter, progress along this path to the start of CIL cutover pre-testing just about made expected progress. As of the February 1, 2017 IPS, the first activity in the diagram (FHL02-CSR1180) above has yet to finish, and is projected to complete one day later than previously planned, on February 2, 2017. It also appears that the planned original duration of the next activity in the path (FHL02-CSR210) was increased over the quarter, from 13 to 17 days. The delays to the planned finish of FHL02-CSR1180 and the increased duration of FHL02-CSR210 resulted in the forecasted start of Program-critical CIL cutover pre-testing to be delayed from February 20 to February 27, 2017, over the quarter.

Path to Completion of Signal Power Separation

Below is a diagram showing the previous quarter's progress on the path of work that was reported as critical in the January 1, 2017 IPS update.

Path through Signal Power Separation	IPS	Start	Finish
FHL02-30200: Fabricate hatch - By contrator through CH057	1-Nov	8/26/2016 A	11/11/2016
	1-Feb	8/26/2016 A	11/19/2016 A
FHL02-31130: GEC submits Power Flow Study	1-Nov	9/1/2016 A	11/1/2016
	1-Feb	9/1/2016 A	2/28/2017
FHL02-31150: Step 1: CH053 - Complete Punch List items, Training for LIRR and Perform Load test of woodside MG***	1-Nov	-	-
	1-Feb	11/29/2016 A	2/3/2017
FHL02-31160: Step 2: Feed Signal Circuit #135 with Woodside MG, and to verify Phase polarity at existing Harold CIL, H and 23 cases***	1-Nov	-	-
	1-Feb	2/4/2017	2/4/2017
FHL02-31170: Step 3: Amtrak Sub44 to feed reserve circuit #135. Feed signal circuit #134 with wood side MG and Burn-in***	1-Nov	-	-
	1-Feb	2/4/2017	3/5/2017
FHL02-30240: Install Hatch (2 weekends) - By contrator through CH057	1-Nov	11/12/2016	11/13/2016
	1-Feb	2/11/2017	2/12/2017
FHL02-30220: Step 4 & 5: Install Transformer*	1-Nov	11/14/2016	11/18/2016
	1-Feb	2/13/2017	2/16/2017
FHL02-2220: Implementing Cut-over Sequencing Plan - Phase I**	1-Nov	11/21/2016	12/19/2016
	1-Feb		
FHL02-5140: Implementing Cut-over Sequencing Plan - Phase II**	1-Nov	12/20/2016	1/20/2017
	1-Feb		
FHL02-30140: Implementing Cut-over Sequencing Plan - Phase III**	1-Nov	1/23/2017	2/17/2017
	1-Feb		
FHL02-3260: LIRR Cutover MG SPS (SPS Complete) w/o EO Control	1-Nov	-	2/17/2017
	1-Feb		
FHL02-31180: 91.6 Hz Power to H1/H2/H5/H6 CIL's - To be isolated from Sub 44***	1-Nov	-	-
	1-Feb	2/17/2017	2/17/2017
FHL02-CSR1220: Input/Output Processor Tests****	1-Nov	2/20/2017	5/4/2018
	1-Feb	2/27/2017	3/10/2017



Dashed black arrows depict logic from November 1, 2016 IPS Full black arrows depict logic from February 1, 2017 IPS

*Activity description from February 1, 2017 IPS Previous to the February1, 2017 IPS, this was FHL02-30220: Install Transformer

**Activities removed from the IPS as of February 1, 2017 Previous to the February1, 2017 IPS, these activities drove the start of critical FHL02-CSR1220

***Activities added in the IPS as of February 1, 2017

****Activity description from February 1, 2017 IPS Previous to the February1, 2017 IPS, this was FHL02-CSR1160: Pre-Testing - H1/H2/H5/H6/Loc 30

ESA has reported that FHL02-30220: Step 4 & 5: Install Transformer is the driving predecessor to the start of Program-critical CIL cutover pre-testing. Over the previous quarter, from the November 1, 2016 IPS to the February 1, 2017 IPS, the forecasted start of FHL02-30220: Step 4 & 5: Install Transformer has been delayed approximately day for day, from November 14, 2016 to February 13, 2017 (circled in yellow, above). This appears to be due to revisions of critical path IPS activities and logic relationships. In the figure above, activities marked with *** were added to the IPS over the quarter and activities marked with ** were removed from the IPS.

The result of the schedule revisions shows that originally – the installation of the transformer hatch, and the transformer itself, both reported to be necessary for signal power separation and subsequently, Program-critical CIL cutover pre-testing – was only dependent on the fabrication of the transformer hatch. Currently, the logic in the IPS shows that – the installation of the transformer hatch, and the transformer itself – cannot occur until the three added activities are complete. Over the quarter, added activity FHL02-31150: Step 1: CH053 - Complete Punch List items, Training for LIRR and Perform Load test of Woodside MG, has taken longer to complete than planned, impacting the installation of the transformer. Additionally, it appears that approximately three months of critical path work was removed from the IPS over the quarter, previously shown to be necessary between the transformer installation and the completion of signal power separation.

4.4 CS179 Systems Package 1 – Facilities Systems

ESA provided several Milestone Date Tables in the IPS. Table 4.4, below, is a sample of the table provided for CS179 Systems Package 1 – Facilities Systems in the PMT's February 1, 2017 IPS report:

TABLE 4.4 - CS179 Contractor Milestone Dates

Milestone	Description	Contract Date	Last Month	Current Month	*Delta (CD)
MS #1	Complete All Work in TPSS C05 at Vernon Blvd Ventilation Facility	12/31/2016	4/11/2017	3/15/2017	-74
MS #3	Complete All Work Plaza Rooms (CIR, Signal Reactor, Interlocking 1D, TPSS C06 & C07)	12/31/2016	3/29/2017	5/2/2017	-122
MS #4A	Complete All Work in Traction Power S/S C04 on Level P1 in 2nd Ave. Vent Facility	2/1/2017	8/23/2017	9/23/2017	-234
MS #5	Complete All Work in GCT-6 CIR to Room Ready Condition	4/30/2017	5/22/2017	6/9/2017	-40
MS #6	B10Complete All Work in Bulk Power Substation for Energization of 13.2 kV Cables	1/31/2017	5/24/2017	6/23/2017	-143
MS #7	Complete All Work in GCT-5 CIR to Room Ready Condition	4/30/2017	9/6/2017	6/27/2017	-58

MS #8	Complete All Work in GCT-4 CIR to Room Ready Condition	4/30/2017	11/15/2017	7/11/2017	-72
MS #9	Complete All Work in Traction Power Substations C01 and C02 - Tail Tracks	6/8/2017	7/23/2017	7/27/2017	-49
MS #10	Complete All Work in GCT-3 CIR to Room Ready Condition	9/6/2017	11/2/2017	12/7/2017	-92
MS #11	Complete All Work in Traction Power Substations C03 at 55th Street Vent Facility	3/25/2018	7/26/2018	4/6/2018	-12
MS #12A	Complete All Work in the TMC, TOC, BCS, and FON to Commence IST	9/1/2018	1/10/2019	2/6/2019	-159
MS #12B-1	Complete Integrated Testing of all equipment installed under Contract CM007	3/23/2020	7/1/2020	3/23/2020	0
MS #12B-2	Complete Integrated Testing of all equipment installed under Contract CM014A	3/23/2020	7/1/2020	3/23/2020	0
MS #12B-3	Complete Integrated Testing of all equipment installed under Contract CM014B	3/23/2020	7/1/2020	3/23/2020	0
MS #13	Substantial Completion	7/1/2020	7/1/2020	7/1/2020	0

The PMOC notes a delay to many of the intermediate forecasted milestone dates, as follows:

MS3 from 3/9/17 to 5/2/17.

MS4A from 7/28/17 to 9/23/17.

MS5 from 4/25/17 to 6/9/17.

MS6 from 4/27/17 to 6/23/17.

MS7 from 4/27/17 to 6/27/17.

MS8 from 5/12/17 to 7/11/17.

MS10 from 10/3/17 to 12/7/17.

MS12A from 12/28/18 to 2/6/19.

The PMOC is concerned about the delay to forecasted intermediate milestones, with no impact shown to final milestones.

5.0 PROJECT COST

Note: All references to expenditures in this report are with respect to the current cost baseline that was agreed upon at the MTA CPOC meeting in June 2014.

5.1 Budget/Cost

On June 23, 2014, MTACC presented a budget for the ESA project of $10,178M (excluding the $463M Rolling Stock Reserve and financing cost) to the MTA CPOC. Table 5.1, below, shows the changes in the SCC budget breakdown between the FFGA Baseline budget, the Amended FFGA budget, and the 2014 re-planned budget.

Observations: During 3Q2016, ESA indicated that the results of the Harold Schedule Status update and the Force Account Overrun Analysis will increase project costs by $246 million. ESA also reported that OCIP costs will overrun by $191 million. There will also be added costs at the GCT Concourse for remediation of water leaks, Wi-Fi and cellular service, and digital advertising. In addition, the detailed results of the in-depth risk assessment for Contract CQ033 have not yet been reported.

Concerns and Recommendations: The current forecast of Force Account costs does not include any amounts from this analysis. [redacted] The request for an amendment has already been delayed. [redacted] The current budget forecast must therefore be considered as highly optimistic.

Table 5.1: Comparison of Standard Cost Categories: FFGA vs. CBB

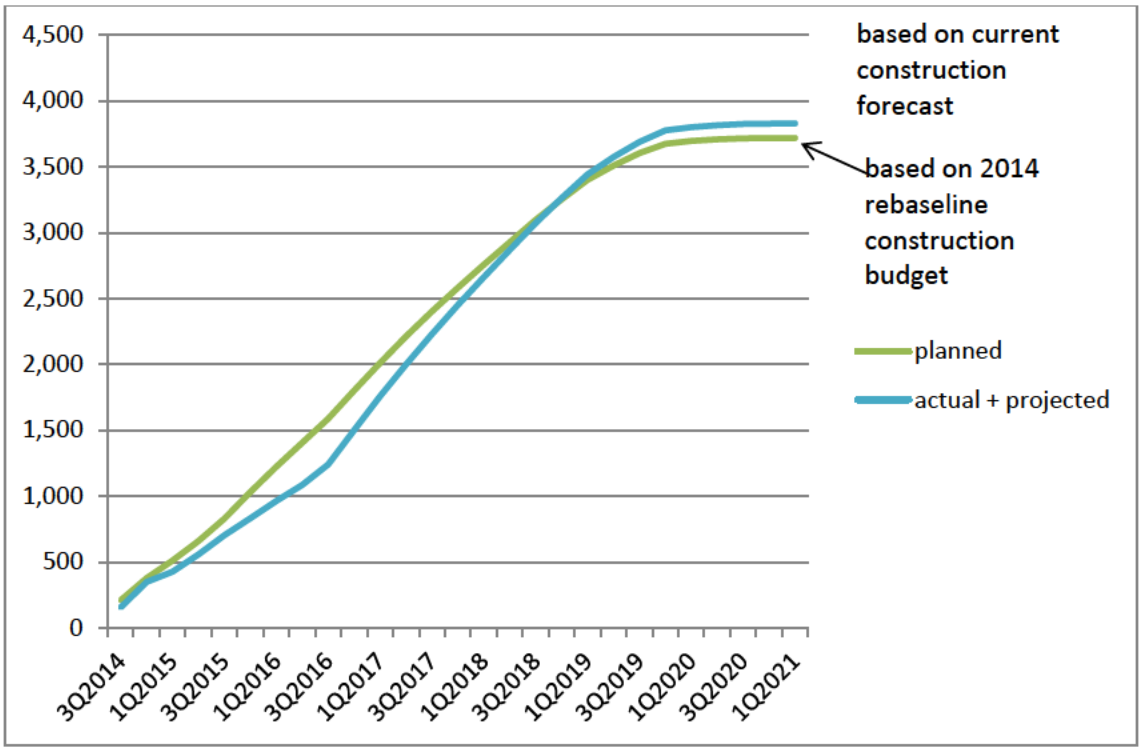
Standard Cost Category	FFGA	June 2014 Project Budget	Amended FFGA	Mar-16 Current Budget	Jun-16 Current Budget	Sep-16 Current Budget	Dec-16 Current Budget	CBB Variance from FFGA	CBB Variance from Amended FFGA
10 - Guideway & Track Elements	$ 1,989	$ 3,405	$ 3,353	$ 3,443	$ 3,467	$ 3,475	$ 3,486	75.27%	3.96%
20 - Stations, Stops, Terminals, Intermodal	$ 1,169	$ 2,238	$ 2,327	$ 2,314	$ 2,326	$ 2,325	$ 2,328	99.16%	0.06%
30 - Support Facilities (Yards, Shops, Admin)	$ 356	$ 474	$ 451	$ 472	$ 473	$ 472	$ 472	32.70%	4.80%
40 - Site Work and Special Conditions	$ 205	$ 611	$ 562	$ 594	$ 594	$ 592	$ 588	186.89%	4.57%
50 - Systems	$ 619	$ 606	$ 628	$ 569	$ 568	$ 582	$ 580	-6.32%	-7.61%
60 - ROW, Land, Existing Improvements	$ 165	$ 219	$ 192	$ 216	$ 215	$ 215	$ 215	30.53%	12.04%
70 - Vehicles	$ 494	$ 210	$ 880	$ 210	$ 210	$ 210	$ 210	-57.50%	-76.13%
80 - Professional Services	$ 1,184	$ 1,975	$ 1,809	$ 1,977	$ 1,978	$ 1,978	$ 2,003	69.20%	10.74%
[redacted]									
100 - Financing Cost	$ 1,036	$ 1,036	$ 1,116	$ 1,036	$ 1,036	$ 1,036	$ 1,036	0.00%	-7.20%
[redacted]									

5.2 Project Cost Management and Control

Status:

The PMT reported in January 2017 that the actual total project progress was 68.0% vs. 71.6% planned progress resulting from the June 2014 re-baseline (based on the total amount invoiced compared to the total current budget). In addition, construction progress was reported as 67.8% actual vs. 72.8% planned. Table 5.2 shows the planned construction spending through completion at the target RSD vs. actual spending through 3Q2016, and projected required spending. To date, based on trends which have remained consistent since the re-baselining, the actual and planned amounts continue to diverge, and the 1Q2021 RSD becomes more difficult to achieve.

Table 5.2: Planned, Actual & Projected Construction Cash Flows to Target RSD



Construction Cash Flow Starting at 2014 Rebaseline

Table 5.2 - The "planned" curve shows construction cash flow that was planned by ESA at the 2014 re-baselining in order to reach revenue service by the 1st quarter of 2021. At that time, the total construction budget was $7.38 billion. The vertical axis is $million, starting at $0 at the time of the re-baselining. The "actual" curve, up to the 2nd quarter of 2016, shows actual construction spending as reported by ESA. The "projected" portion of that curve, from the 2nd quarter of 2016 through the 1st quarter of 2021, shows the PMOC's projected construction spending rate to reach the current $7.49 billion final construction budget by the 1st quarter of 2021.

[redacted]

Table 5.3 shows the budget status of contracts awarded to date and paid amounts to date.

Table 5.3: Project Budget and Invoices As of January 31, 2017

Elements	Baseline Total Budget (June 2014)	Current Baseline Budget (January 2017)	Actual Awards (January 2017)	Paid to Date (January 2017)	Actual % Budget Paid (December 2016)
Construction	$ 7,379,296,706	$ 7,499,505,760	$ 6,629,369,721	$ 4,939,055,338	65.86%
Soft Costs Subtotal	$ 2,798,474,304	$ 2,678,265,250	$ 1,972,882,193	$ 1,836,474,255	68.57%
Engineering	$ 720,615,810	$ 726,521,828	$ 699,481,280	$ 689,623,385	94.92%
OCIP	$ 282,613,620	$ 307,613,620	$ 290,470,653	$ 282,295,829	91.77%
Project Mgmt.	$ 972,168,644	$ 972,168,644	$ 863,768,992	$ 747,395,009	76.88%
Real Estate	$ 182,076,230	$ 178,049,776	$ 119,161,268	$ 117,160,032	65.80%
Rolling Stock	$ 202,000,000	$ 202,000,000	$ -	$ -	0.00%

[redacted]

Concerns and Recommendations:

The PMOC recommends that ESA include known cost overruns in the current forecast. The current cost forecast shown in ESA's Monthly Progress Report remains misleading until the significant overruns of force account, OCIP, and GCT Concourse fit-out additions are shown.

5.3 Change Orders

Table 5.4 below shows the executed contract modifications greater than $100,000 during January 2017:

Table 5.4: ESA's Change Order Log in January 2017 (>$100,000)

Contract	Mod #	Description	Executed Date	Amount
Harold Structures Part 3 WBBP – CH057A	27	B-924W Guy Anchors Temporary Support of Excavation	1/26/2017	$208,000
Systems Facility Package No.1 – CS179	26	Vernon Facility TPSS Slab Demo and Reinstallation	1/11/2017	$408,711
Systems Facility Package No.1 – CS179	33	Entry Management Control	1/19/2017	$239,000
General Engineering Contractor	134	CM015 – 48th St Entrance Revisions	1/13/2017	$270,023

Status/Observation:

The PMOC finds that the above change orders reflect its understanding of recent changes to project scope

5.4 Project Funding

a) Federal Funding

As of January 31, 2017, the PMT has awarded a total of $8.6 billion in contract work. The Federal share of awarded contracts is $1.97 billion. The total Federal funding commitment, as of January 31, 2017, remained at $2.699 billion.

b) Local Funding

The obligated local share was $5,065M. There has been a $617,607,000 incurred finance cost (for local share) to date.

5.5 Cost Variance Analysis

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]					203,737,126
Allocated Contingency	$ 378,987,685	$ 255,139,466	$ 252,077,942	$ 250,624,771	$ 244,333,364
Project-Wide Reserve	$ 439,000,000	$ 327,836,957	$ 327,836,957	$ 294,510,157	$ 291,911,382
Total	$ 817,987,685	$ 582,976,423	$ 579,914,899	$ 545,134,928	$ 536,244,746

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[redacted]

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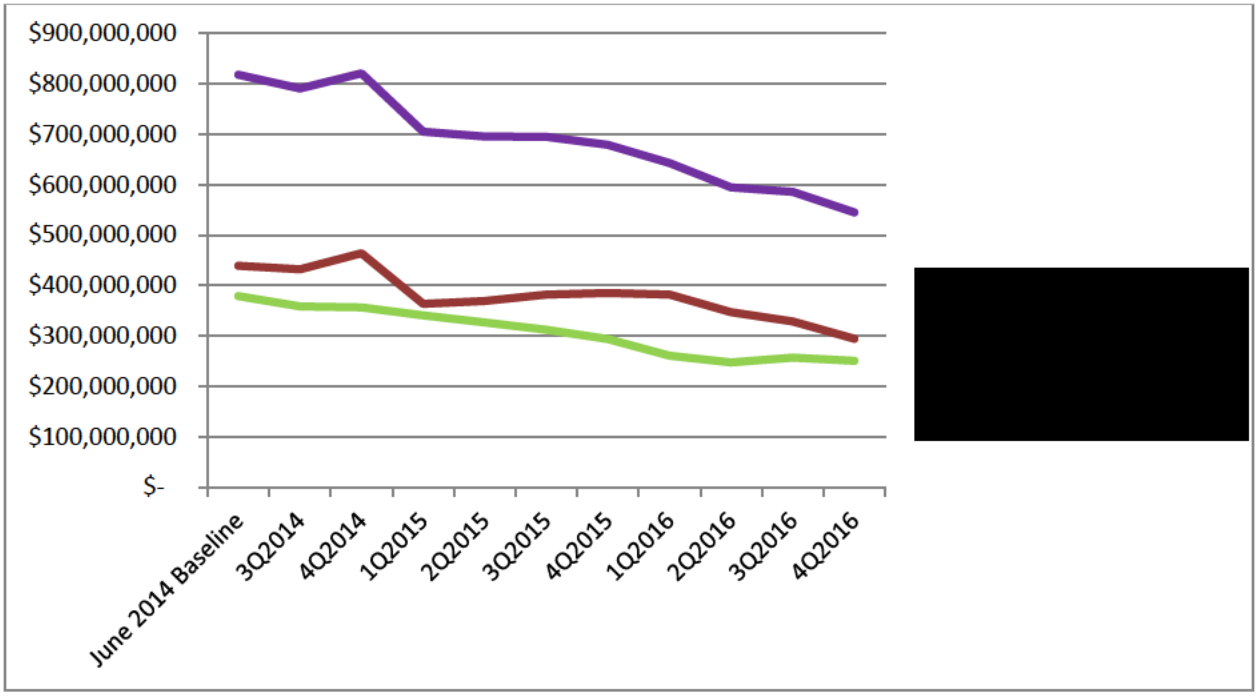
[redacted]



6.0 RISK MANAGEMENT

Based on long standing issues and concerns regarding Amtrak's ability to provide sufficient force account support to the ESA project, especially Electric Traction (ET) resources, ESA completed a Harold schedule re-sequencing in December 2014, also known as "ESA First," that advanced work elements required for the new LIRR service to GCT and delays some of the FRA funded High Speed Rail (HSR) work beyond 2017. Railroad construction work prior to development of the "ESA First" schedule was also falling behind schedule due to the overall delays to much of the Harold work. MTA continues to work with both the FTA and the FRA to resolve funding drawdown issues.

With regard to the implementation of the "ESA First" Harold Re-sequencing of late 2014, the PMOC notes that, through 2015 and into 2016, Amtrak has not been able to provide even the reduced level of force account resources that was planned in support of the schedule. Additionally, the projected force account costs are trending noticeably higher than planned [redacted] In 3Q2016, ESA completed a comprehensive study to identify and evaluate the reasons for inadequate level of force account resources required to support the Harold schedule and to make recommendations to revise the schedule reflecting the reduced force account support and to plan for the increasing force account costs. Based on the outcome of the study, the revised project schedule indicates that the Harold critical path has now become the ESA program critical path and leads the secondary Manhattan/Systems critical path by approximately three months. Cost impacts have been evaluated and ESA estimates the additional Amtrak and LIRR force account cost to be $200-300 million for support of all remaining

Harold Interlocking work to complete the Revision 14-4M Alignment. Details of the cost analysis and forecast were presented to the FTA and PMOC on October 26, 2016.

The PMOC has continuing concerns regarding the impact to the ESA Harold work due to the Amtrak program to harden ERT Lines 3 and 4 in preparation for extended outages for ERT Lines 1 and 2 to complete Hurricane Sandy damage-related reconstruction work, earlier scheduled to commence in 2018, but now planned for 2019. There is concern, shared by both the PMOC and MTACC, that significant Amtrak Force Account resources will be needed to support the hardening work, which could further reduce the Amtrak resources available to support the ESA Harold Re-Sequencing Plan. During July 2016, Amtrak advised MTACC that it plans to start work on the total track replacement in ERT Lines 3 and 4 during 4Q2016. During March 2017, MTACC advised the PMOC that Amtrak hardening work on Line 3 had been completed. The PMOC notes that the Line 3 work had minimal impact on East Side Access construction during the period that it was underway. There is also concern that track outages required for the hardening work may conflict with ESA needs to support completion of the planned Harold work required for LIRR service into GCT by 2020. However, no noticeable impacts to availability of Amtrak force account resources through March 2017 were observed due to work in the ERT Lines 3 and 4. The PMOC does note, however, that Amtrak's decision about taking ERT Line 2 out of service first, in 2019, for the 18-month reconstruction work is not expected to directly impact the completion of the Harold work needed to commence LIRR service into GCT. Amtrak's decision will, however, impact Contract CH058B, Harold Structures – Part 3B, Eastbound Re-Route, a Regional Investment initiative having independent utility that is not required to provide the connection to GCT for LIRR service. The ESA-PMT has indicated that there is no work-around plan for this situation, during which ERT Line 1 would have to be taken out of service in order to construct the Eastbound Re-Route.

6.1 Risk Process

Status/Observations:

The PMOC observes that the new ESA Risk Manager continues working to re-establish the ESA risk management process as a key element for the PMT's decision making process. He has resumed the program risk meetings with the PMOC and held meetings in March 2016, June 2016, and December 2016. He has revised the ESA Risk Register procedures and reporting to streamline the process to improve its usefulness as a practical management tool.

Concerns and Recommendations:

The segmentation of construction packages has created multiple inter-contract interfaces and milestones. In the PMOC's opinion, the probability of successfully achieving all of them is low, and leads to the possibility of a ripple effect of delays and coordination difficulties between contracts. There is very limited opportunity, at best, for the contractors to make up any of the time lost to interface delays due to work site time and access constraints. Should delays start to accumulate, recovery will likely not be possible. Managing inter-contract handoffs and interfaces will be challenging and represents significant MTACC-retained risks. The PMOC does recognize the PMT's efforts to mitigate some of the potential cost exposure by negotiating adjustments to schedule constraints across the four ESA contracts currently held by the same contractor (CM006, CM007, CS179, and CQ032). These mitigations, however, are not necessarily effective in solving either the productivity challenges that result from the CM007 schedule that the PMOC considers very aggressive or the management challenges of coordinating the designs, functionality, and installation of the 19 individual systems.

The PMOC remains concerned about the coordination risk retained by MTACC on the completion of the work in Manhattan, especially with regard to the construction and testing interface management for the systems work. When combined with the extensive scope re-configuration changes associated with the Harold Interlocking work, the PMOC believes that this may create significant changes to the overall project risk profile.

6.2 Risk Register

Status/Observation:

Due to the lack of continuity in leadership for the risk management process caused by the resignation of the ESA Risk Manager in October 2015, the PMT had not been able to update the risk register on a regular basis. This situation was resolved by the new ESA Risk Manager, who started work on the ESA project in January 2016. He issued a draft updated program Risk Register during 2Q2016 and is working on some revisions to the register to streamline the risk review and tracking process. He issued the next Risk Register update during 4Q2016. The ESA Risk Manager conducted a Contract CM014B Risk Refresh workshop in February 2017. He plans to conduct a comprehensive Risk Review for the remaining ESA work in the Harold Interlocking during April 2017 that will be facilitated by an experienced outside consultant.

Concerns and Recommendations:

ESA needs to continue regularly scheduled updates of the Risk Register as called for in the RMP. The ESA Risk Manager is actively working to resume this process.

The PMOC considers the major risks for the East Side Access Program to be:

- Program Funding (2015-19 Capital Plan issue resolved in May 2016; current forecast cost growth funding will rely on Capital Plan amendment and other sources);
- Recovery of lost time due to significant schedule delays on Contracts CM014B, CS179 and CS084;
- Successful execution of dozens of hand-off interfaces across multiple contracts;
- Contractor access and work area coordination in Manhattan;
- Duration of integrated systems testing;
- Continued availability of adequate Amtrak and LIRR force account resources for both construction and third-party contractor support in Harold Interlocking [increasing risk trend noted in 4Q2015 through 1Q2017];
- Continued availability of required track outages in the Harold Interlocking [Starting in September 2016, fewer priority weekend track outages have been available]; and
- Maintaining adequate schedule performance of the remaining work in Harold Interlocking, now the ESA program critical path, that is dependent on a very high level of planning and coordination between third-party contractors and the LIRR and Amtrak force account management for both access and protection and direct labor work.
- Continued slippage of the LIRR vehicle procurement.

6.3 Risk Mitigations

Current Risk Mitigation Efforts:

The PMOC notes that the PMT is implementing mitigation strategies for a number of identified risks. Examples include advancing procurement of the eight CILs for the Mid-Day Storage Yard, actively engaging Amtrak to develop some specific strategies to mitigate many of the identified risks, and to pursue labor agreements that will provide flexibility and additional resources to allow more third-party work in Harold Interlocking. Implementation of the Harold schedule re-sequencing to support the "ESA First" approach of advancing work elements required to provide LIRR service into GCT was done to mitigate some of the schedule delay risks. However, implementation of the Harold re-sequenced schedule has not met the established goals because Amtrak has not been able to provide the necessary force account support to the third-party contractors and complete their own force account construction work elements on schedule. As a result, MTACC has reviewed the 2015 Harold schedule re-sequencing plan to determine the detailed causes of the schedule slippage. MTACC has revised the Harold schedule to reflect the current status and expected level of support from Amtrak and LIRR. The associated revision to the Integrated Project Schedule shows that the remaining work in Harold Interlocking is now on the program critical path. MTACC re-evaluated the cost of force account support going forward and has forecast the cost growth to be in the range of $200-300 million.

Concerns and Recommendations:

MTACC has completed several programmatic risk assessments and multiple package level risk reviews. The PMOC believes that MTACC is capable of developing effective mitigation strategies for the risks identified, and of tracking and reporting on them on a regular basis as required by the RMP. MTACC has demonstrated its capabilities to address many evolving risks in the past, especially with regard to Harold Interlocking, and needs to continue to focus on developing, updating, and implementing effective mitigation plans for both the currently identified major risks and for future potential risks.

The PMOC notes that, although MTACC has actively engaged Amtrak to develop some specific mitigations for certain risks and continues to work on strategies for mitigating many of the other identified risks, continued shortcomings in provision of adequate force account resources have adversely impacted the current Harold schedule and have caused the remaining Harold work to become the ESA program schedule critical path. The developments made known to the FTA and the PMOC during 2Q2016 and 3Q2016 with regard to the schedule performance of the remaining work in Harold Interlocking are certainly not encouraging. Many external stakeholder issues with Amtrak and LIRR will remain beyond MTACC's direct control, however, and are likely to complicate development and acceptance of the specific problem resolutions essential to completion of the project.

The PMOC notes that ESA has been unable to develop a sustainable schedule for the remaining Harold Interlocking work that can be achieved despite the most recent full re-plans in 2013-2014 and again in 2015 as the "ESA First" Harold Re-Sequencing. Based on insufficient support from Amtrak during 2015 and into 2016, ESA has undertaken another Harold re-plan effort that reflects the continued inadequacy of Amtrak support with regard to force account resources and track outages for ESA work. The results of the study, along with the recent Amtrak decision about the ERT tunnel program, do not provide any basis for optimism going forward, especially considering

that the situation has deteriorated so quickly since the current baseline was established only 33 months ago:

- [redacted]
- The Harold critical path has now become the ESA Program Critical Path and leads, the secondary Manhattan/Systems critical path by three months; and,
- Amtrak's decision to take ERT Line 2 out of service first for an extended outage of one year or more will not support the current ESA planning to complete all of the remaining Harold work, including the High Speed Rail work, by 2020. The PMOC does note, however, that MTACC believes that Amtrak's decision about ERT Line 2 will not impact the remaining work in Harold Interlocking required to provide LIRR service to Grand Central Terminal.

Through 2016, ESA continued to experience a worsening trend of insufficient Amtrak Force Account personnel, now including track foreman as well as Electric Traction (ET), to properly support its 3rd Party contractors currently working in Harold Interlocking, CH057, CH057A, and earlier in 2016, CH053.

Additionally, the ESA PMT has reported that it does not receive all the track outages it requires to do the work that it schedules. The ESA PMT has stated that both of these conditions have been major factors for why Harold construction recently became the critical path of the ESA Project. The PMOC recognizes ESA's efforts to rebaseline the remaining work in Harold Interlocking to reflect more realistic expectations of Amtrak support. However, the situation is not improving and the PMOC recommends that the PMT engage senior management in MTACC and MTA to assist with resolution of this problem **[Ref: ESA-124-Jun16]**.

During 4Q2016 and into 1Q2017, the PMT reported that Amtrak has been providing consistent levels of support over the last few months and this allows ESA to more effectively plan work in Harold on a week-to-week basis. The PMT does acknowledge, however, that the level of support remains less that required to adequately support the Harold baseline schedule. This continuing problem may prevent ESA from completing the Harold work planned for 2017-18 that is critical to achieving the target RSD of February 2021, although ESA has been able to maintain acceptable progress through March 2017. The PMT further noted that Amtrak's New York Division, which is responsible for the force account resources assigned to the ESA Harold Interlocking work, has apparently indicated that ESA is not their top priority. Currently, the Moynihan Station project is Amtrak's top priority for assignment of force account resources. The PMOC believes that this situation will need to change soon in order for Amtrak to be able to provide the required force account resources and track outages required to support ESA's schedule for completion of the remaining work in the Harold Interlocking.

7.0 PMOC CONCERNS AND RECOMMENDATIONS

Priority in Criticality column

1 – Critical 2 – Near Critical

Number/ Date Initiated	Section	Issues/Recommendations	Criticality
ESA-114-Sep13	3.0 ELPEP Compliance	ELPEP Compliance: With MTACC's submission of its East Side Access FTA Quarterly Report (Apr, May, and June '13) and then continuing with all subsequent reports through July 2016, the PMOC notes that the ESA project continues to be partially non-compliant with ELPEP and is not meeting some of the more important requirements of the SMP and CMP sub-plans to the PMP. Status Update: Specific areas of non-compliance were provided to MTACC at the September 12, 2013, ELPEP Quarterly Review Meeting and additional details provided on October 30, 2013. MTACC provided preliminary draft responses (partial) to the PMOC list of ELPEP non-compliances at the December 12, 2013, ELPEP Quarterly Compliance Meeting. MTACC and the PMOC met on February 27, 2014, to discuss the FTA and PMOC's concerns. At that meeting, MTACC acknowledged the need for more transparency/clarity in documenting the cost/schedule management processes to support traceability in the decision making process. Since that time, the PMOC has endeavored to engage the ESA Project Controls in productive discussions regarding improvements to cost and schedule reporting during the monthly cost and schedule review meetings. MTACC noted that both Cost and Schedule Management Plans will be revised, after completion of the PMP update, to improve the management processes and reporting. MTACC submitted the revised CMP on June 30, 2015, and two review cycles culminated in a working meeting on November 16, 2015, to review outstanding PMOC issues/concerns. MTACC issued an interim revision update of the CMP in December 2015 and the PMOC completed its review and met with MTACC in June 2016. The revised SMP was submitted by MTACC on October 26, 2015 and the PMOC completed its review in June 2016. During October 2016, MTACC submitted the completed review comment matrix and a revised CMP. The PMOC has completed its evaluation and concluded that the CMP is acceptable and provided the FTA with the	1

Number/ Date Initiated	Section	Issues/Recommendations	Criticality
		comment close-out details in November 2016. MTACC has followed up with the agreed upon revisions to the SMP and has completed its responses in the review comment matrix. During October 2016, MTACC submitted the completed review comment matrix and a revised SMP. The PMOC has completed its evaluation, found no significant issues, and provided its findings to the FTA in November 2016 that the FTA subsequently forwarded to MTACC. In January 2017, MTACC submitted additional documents to the FTA and PMOC in response to the remaining comments. The PMOC has now completed its evaluation, concluded that the CMP is acceptable and provided the FTA with the comment close-out details in March 2017. The PMOC notes that the updated TCC Plan was expected earlier in 2014 but was submitted on June 11, 2015, based on finalization of the role, responsibilities, and level of authority of the ESA Change Control Committee. The FTA has provided MTACC with the PMOC review comments on both the TCC and the CMP. The PMOC continues the process of resolving all remaining issues with MTACC via working level meetings. Recommendation: The PMOC will continue to work with MTACC at the monthly cost and schedule review meetings, as well as dedicated meetings as needed, to advance progress in this area. Although some improvements to the transparency/clarity and traceability of the decision-making process with regard to cost and schedule have been noted, the PMOC's opinion is that MTACC's continued efforts to improve are still needed.	
ESA-122-Jun16	1.6 Project Quality	Quality Staff Insufficient and Quality Manager has resigned: The original Quality Staff in 2015 consisted of Quality Assurance Manager and a staff of five Quality Managers/Engineers. Status Update: A new ESA Quality Manager was hired and began work in October 2016. At the same time, an ESA Quality Engineer was promoted to Deputy Quality Manager. A new Quality Engineer, possessing electrical, system, and transit experience, has been hired and started work in early February 2017.	1

Number/ Date Initiated	Section	Issues/Recommendations	Criticality
		Recommendation: Since the additional ESA Quality Engineer was hired, the PMOC will close this issue with this report.	
ESA-123-Jun16	1.4b Federal Regulations	Track Turnouts for LIRR – continued delays to finalizing specification. Status Update: There are approximately 41 turnouts (from former Stages 3 and 4) remaining to be installed in Harold Interlocking. These turnouts need to be "Buy America" compliant. The GEC completed preparation of its final "Buy America"-compliant specifications in early 1Q2017 and ESA issued a "Request for Bid" (RFB) to prospective vendors. Responses to the RFB were originally due on March 17, 2017, but, due to clerical errors in the RFB, the date was extended until April 13, 2017. Recommendation: The PMOC believes that ESA will receive responses to the RFB on April 13, 2017, as now planned. Since time is of the essence, the PMOC recommends that ESA review the RFBs as quickly as possible and award a contract shortly thereafter, provided the responses are "Buy America"-compliant. Turnouts are long lead items and ESA must have 4 of these turnouts on hand for its "Northeast Quadrant" work scheduled for July 2018.	2
ESA-124-Jun16	6.3-Risk Mitigations	Continued issues with insufficient Amtrak FA support of third-party contractors and lack of required track outages. Status Update: During 4Q2016, ESA continued to experience insufficient Amtrak Force Account personnel, track foreman and Electric Traction (ET), to properly support its 3rd Party contractors currently working in Harold Interlocking, CH053, CH057, and CH057A continued through 4Q2016. Additionally, the ESA PMT has reported that it does not receive all the track outages it requires to do the work that it schedules. The ESA PMT has stated that both of these conditions have been major factors for why Harold construction recently became the critical path of the ESA Project. Additional issues arose during 3Q2016 that contributed to the problem, including reduced availability of priority weekend track outages and increased demand for track foreman to cover individual construction work activities.	1

Number/ Date Initiated	Section	Issues/Recommendations	Criticality
		Recommendation: The PMOC recognizes ESA's efforts to rebaseline the remaining work in the Harold Interlocking to reflect more realistic expectations of Amtrak support and to more effectively engage Amtrak at the management level. However, the situation has not improved and the PMOC recommends that the PMT engage senior management in MTACC and MTA to assist with resolution of this problem.	
ESA-125-Sep16	2.1 Engineering/ Design and CPS	On Contracts CS179 and CS084, there are continued issues with late completion of review and approval of contractors' final systems designs and closure of RFIs. Current Status: The PMOC has been reporting delays in the process of GEC and LIRR review and approval of the contractors' final systems designs and closure of RFIs. Schedule impacts have been significant on both contracts. Contributing factors include technical capacity and capability shortcomings as well as coordination issues between the CM, GEC, and LIRR. Efforts by ESA PMT to resolve issues have been ongoing but, to date, have only been effective on the CS084 contract; which, in December 2016, saw a significant improvement in the reduction of the backlog of submittal reviews and comments. This issue still requires improvement on the CS179 contract. ESA senior management has recently elevated discussions involving ESA PMT and CM, the GEC and LIRR. Recommendation: The PMOC recognizes MTACC's efforts to resolve the many issues and to engage higher levels of management for all the involved parties. It is recommended that these efforts continue, on a critical priority basis, until the contributing issues are resolved, the work backlog is significantly reduced and there are no longer delays to the systems' design review and approval.	1

8.0 GRANTEE ACTIONS FROM QUARTERLY AND MONTHLY MEETINGS

Priority in Criticality column 1 – Critical 2 – Near Critical

Number with Date Initiated	Section	Grantee Actions	Criticality	Projected Resolution Date
ESA-A46-Dec12	Section 4.2	The ESA PMT agreed at a meeting held with FTA/PMOC on July 30, 2012, to develop a set of critical metrics jointly with the FTA/PMOC and MTA IEC that would be used as an early indicator of issues that need to be addressed by senior management. The need to do this was reiterated at the November 8, 2012, ESA/SAS mini-quarterly meeting. Critical metrics cannot be properly updated until approved baseline schedules are fully incorporated into their respective IPSs. At present, ESA has incorporated the latest Harold Re-Sequencing, developed in 2Q2016, into the IPS schedule. MTACC needs to check the schedule baseline related to the activity ID numbering so that an accurate comparison can be completed between the July 2014 baseline and the current monthly IPS updates. MTACC started this effort in 2015, but new issues have arisen that require resolution.	2	6/30/17

APPENDIX A - LIST OF ACRONYMS

ARRA	American Recovery and Reinvestment Act
BIM	Building Information Management
CBB	Current Baseline Budget
C&S	Communication and Signals
CCC	Change Control Committee
CCM	Consultant Construction Manager
CM	ESA Construction Manager assigned to each contract
CMP	Cost Management Plan
CPOC	Capital Program Oversight Committee
CR	Candidate Revision
CIL	Central Instrument Location
CPRB	Capital Program Review Board
CPP	Contract Packaging Plan
DCB	Detailed Cost Breakdown
ELPEP	Enterprise Level Project Execution Plan
ERT	East River Tunnel
ESA	East Side Access
ET	Electric Traction
FA	Force Account
FFGA	Full Funding Grant Agreement
FTA	Federal Transit Administration
GCT	Grand Central Terminal
GEC	General Engineering Consultant
HTSCS	Harold Tower Supervisory Control System
IEC	Independent Engineering Consultant (to MTA)
IFB	Invitation for Bid
IPS	Integrated Project Schedule
IST	Integrated System Testing
LIRR	Long Island Rail Road
LTA	Lost Time Accidents
MEP	Mechanical/Electrical/Plumbing
MNR	Metro-North Railroad
MTA	Metropolitan Transportation Authority
MTACC	Metropolitan Transportation Authority Capital Construction

N/A	Not Applicable
NTP	Notice to Proceed
NYCT	New York City Transit
NYSPTSB	New York State Public Transportation Safety Board
OR	Operational Readiness
PE	Preliminary Engineering
PEP	Project Execution Plan
PMOC	Project Management Oversight Contractor (Urban Engineers)
PMP	Project Management Plan
PMT	Project Management Team
PQM	Project Quality Manual
PWE	Project Working Estimate
QA	Quality Assurance
RAMP	Real Estate Acquisition Management Plan
RAP	Rail Activation Plan
RFP	Request for Proposal
RMP	Risk Management Plan
ROD	Revenue Operations Date
ROW	Right of Way
RSD	Revenue Service Date
RTB	Resilient Tie Block
SC	Substantial Completion
SCC	Standard Cost Category
SMP	Schedule Management Plan
SSMP	Safety and Security Management Plan
SSOA	State Safety Oversight Agency
SSPP	System Safety Program Plan
TBD	To Be Determined
TBM	Tunnel Boring Machine
TCC	Technical Capacity and Capability
WBS	Work Breakdown Structure
WBY	Westbound Bypass Tunnel

APPENDIX B - PROJECT OVERVIEW AND MAP

Project Overview and Map – East Side Access

East Side Access Project Map

MTA/LIRR East Side Access Project

Scope

Description: This project is a new commuter rail extension of the Long Island Rail Road (LIRR) service from Sunnyside, Queens to Grand Central Terminal (GCT), Manhattan, utilizing the existing 63rd Street tunnel under the East River and new tunnels in Manhattan and Sunnyside yard. Ridership forecast is 162,000 daily riders (27,300 new riders).

Guideway: This two-track project is 3.5 route miles long, it is below grade in tunnels and does not include any shared use track. In Harold interlocking, it shares ROW with Amtrak and the freight line.

Stations: This project will add a new 8 track major terminal to be constructed below the existing GCT. The boarding platforms and mezzanines of the new station will be located approximately 90 feet below the existing GCT lower level. A new passenger concourse will be built on the lower level of the terminal.

Support Facilities: New facilities will include: the LIRR lower level at GCT, new passenger entrances to the existing GCT, the East Yard at GCT, the Arch Street Shop and Yard, a daytime storage and running repair/maintenance shop facility in Queens, and ventilation facilities in Manhattan and Queens.

Vehicles: The scope and budget for the ESA project include the procurement of 160 new electric rail cars to support the initial service.

Ridership Forecast: MTA projects that, by 2020, the ESA project will handle approximately 162,000 daily riders to and from GCT. This Ridership projection is based on a 2005 study performed by DMJM/Harris (AECOM).

Original Schedule

9/98	Approval Entry to PE	12/10	Estimated Rev Ops at Entry to PE
02/02	Approval Entry to FD	06/12	Estimated Rev Ops at Entry to FD
12/06	FFGA Signed	12/13	Estimated Rev Ops at FFGA
08/19	Revenue Service Date at date of this report (MTA schedule)		

Cost ($)

4,300 million	Total Project Cost ($YOE) at Approval Entry to PE
4,350 million	Total Project Cost ($YOE) at Approval Entry to FD
7,386 million	Total Project Cost ($YOE) at FFGA signed
11,936.0 million	Total Project Cost ($YOE) at Revenue Operations
11,972.1 million	Total Project Cost ($YOE) at date of this report including $ 1,036.1 million in Finance Charges & Regional Investment Program
6,921.9 million	Amount of Expenditures as of January 31, 2017, based on the Total Project Budget of $10,177.8 million
68.0%	Percent Complete, based on the Re-plan budget of $10,177.8 million and invoices in the January 2017 report
[redacted]	[redacted]
67.8%	Construction Percent Complete vs.72.8% planned
68.0%	Overall Project Percent Complete vs. 71.6% planned

APPENDIX C – LESSONS LEARNED

#	Date	Phase	Category	Subject	Lessons Learned
1	Dec-12	Construction	Construction	Muck Handling	During cavern excavation, the CM019 contractor became muck-bound, which caused a project delay of several months. The PMOC recommended that the contractor make extraordinary effort to evacuate the muck. After several months, it finally did, but the schedule time could not be recovered by that point. Lesson learned was to develop a well thought out muck handling plan (including establishment of proper haul roads) before work begins and to follow it during excavation.
2	Dec-12	Construction	Management	Stakeholder Management	The CH053 contractor incurred many months of initial construction delay because Amtrak did not approve the Electric Traction design documents on the project's schedule. A major contributing factor to this was because the MTACC had not established a contractual working relationship with Amtrak prior to letting the CH053 contract. The PMOC recommended that the MTACC and its GEC more closely design the project in accordance with the comments that Amtrak was submitting. To date, the MTACC has exhibited some improvement in this matter, but there are still 2+ Stages to construct, and improvement has not been fast enough or consistent over time. Lesson learned was to develop good working relationships with all project stakeholders before any contracts are let.
3	June-13	Construction	Planning/ Construction	Haul Roads	Haul roads to remove muck need to be passable (preferably paved with a mud slab) with locations pre-determined in areas of confined space such as caverns and tunnels.

#	Date	Phase	Category	Subject	Lessons Learned
					Deep, muck-filled haul roads contributed to the contractor's slow progress in removal of muck during construction. Lesson learned was to plan haul roads in advance and ensure that the muck haulers can travel at a specific rate of speed in order to meet production goals.
4	June-13	Construction	Training	Operator Skill with drill rigs	Lack of proper operator training contributed to inconsistent drilling of 10' deep blast holes which resulted in under/overbreak of excavated material, thus requiring rework to achieve desired results. Lesson learned was to ensure that drill rig operators are properly trained before being allowed to operate a production drill rig.
5	June-13	Procurement	Contract Development	Contract Packaging	Access to work sites, interface with other contracts, and contract staging must be considered when projects employ multiple contractors that may conflict with each other, particularly in confined spaces such as tunnels and caverns. Lesson learned is to carefully consider the access that each contractor may require, perhaps developing a scale model of the expected operation, so that expected operation of each contractor is included in its contractual requirements.
6	June-13	Administration	Quality	Submittals	Identification and resolution of quality issues (e.g. As-Built drawings, NCRs, etc.) must be managed on a daily basis to avoid creation of a backlog. Lesson learned is for the owner to have a well-trained staff with a consistent, coordinated approach (including appropriate pre-approved corrective action) when obtaining contractually required documents from contractors.

#	Date	Phase	Category	Subject	Lessons Learned
7	June-13	Contract Specs/ Construction	Construction	Pneumatically Applied Concrete (PAC)/ Shotcrete	Mismanagement of PAC/Shotcrete application has many different aspects which could adversely affect a project. Lesson learned is that all projects which anticipate use of PAC/shotcrete should carefully examine all aspects of its use and that a careful engineering analysis of the expected use be made so that the approved use can be included in the contract documents for the project.
8	June-13	Procurement/ Construction	Procurement	Qualified Personnel	Ensure that project key personnel are properly qualified and experienced for the positions they will fill on the project. Lesson learned is that personnel not properly qualified, experienced, or possessing the requisite credentials can do more harm than good. The owner should ensure that it is getting the contractor's best personnel when excavating a tunnel or cavern.
9	June-13	Scheduling	Construction	TBM Production	Project management should ensure that accurate, up-to-date, production rates for machinery are used when project schedules are developed. PMOC analysis has revealed that ESA schedules for the Manhattan Tunnel Boring Machines were based on a planned excavation rate of 53 linear feet/day. Actual TBM excavation averaged 34 LF/day, a difference of 35%. Lesson learned is that, depending on the length of excavation, inaccurate estimates can have a large negative impact on project schedule.

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Project Overview		
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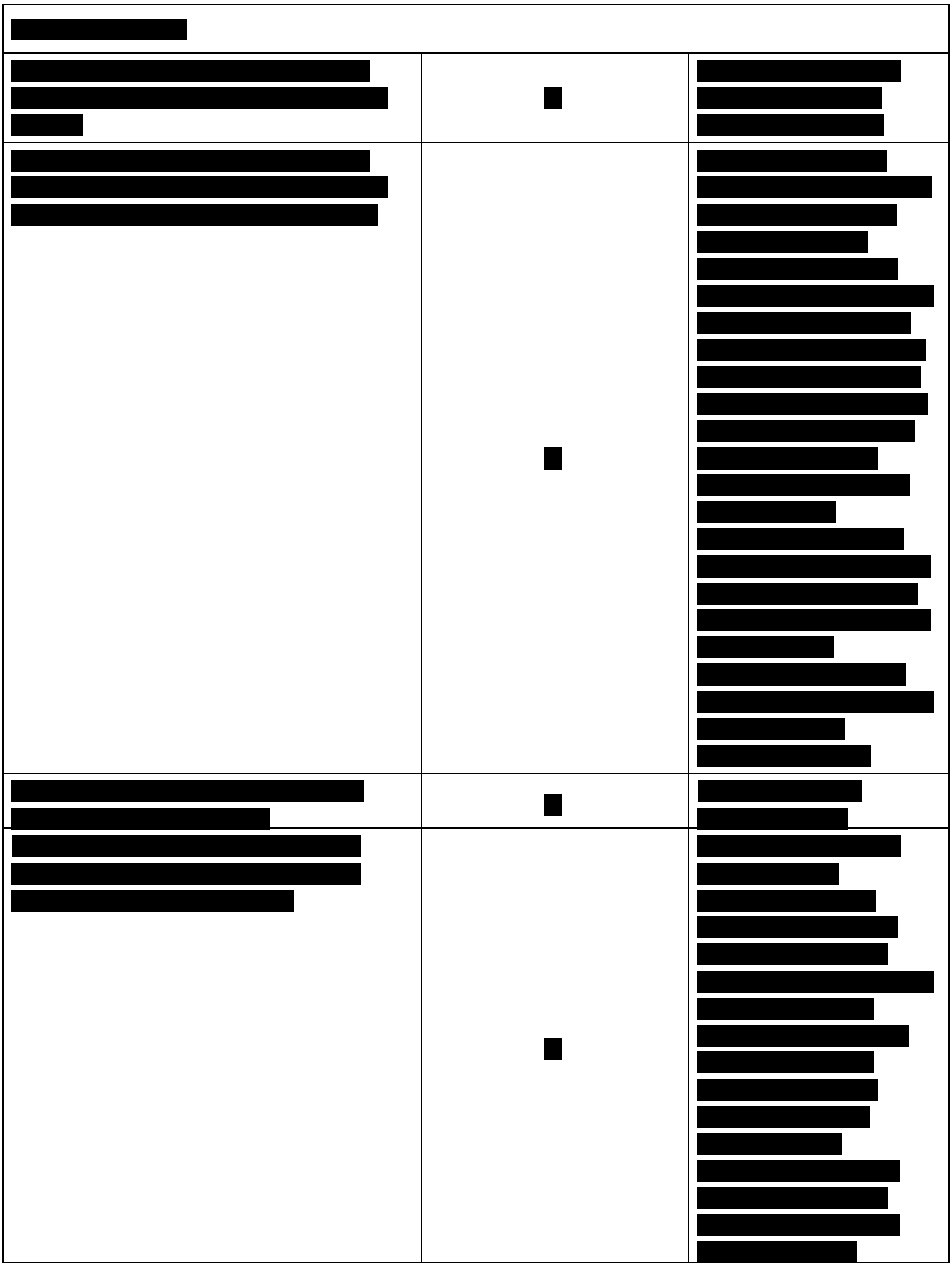

Project Overview		
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Project Overview		
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APPENDIX E – ON-SITE PICTURES
(TRANSMITTED AS A SEPARATE FILE)

APPENDIX F - COST AND SCHEDULE ANALYSIS TABLES

Table F-1: ESA Planned vs Actual Construction Cash Flow as end of 4Q2016

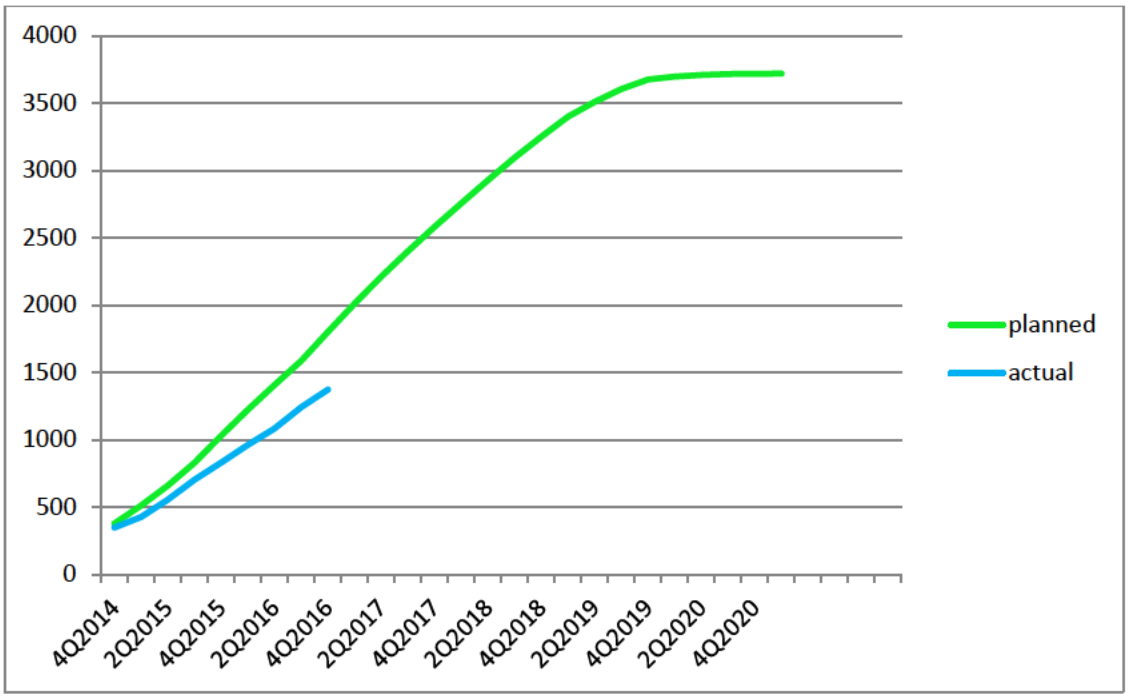


Table F-1 - The "planned" curve shows construction cash flow that was planned by ESA at the 2014 re-baselining in order to reach revenue service by the 1st quarter of 2021. The vertical axis is $million, starting at $0 at the time of the re-baselining. The "actual" curve, up to the 4th quarter of 2016, shows actual construction spending as reported by ESA.

Table F-2: 90 Day Look-Ahead Schedule – February 1, 2017 ESA IPS Schedule

ACTIVITY ID	ACTIVITY DESCRIPTION	START	FINISH
CH057: Harold Structure - Part 2/3 Loop Box Approach, & EBRR West Approach & Tunnel			
CH057-3110	Complete Catenary / Signal Tower Relocation for L & T CIH Cutover		01-Feb-17
CH057-3370	Construct "D" Pit (Incl TBM Recovery) - For Cutover New Main Line 4	14-Dec-15 A	23-Feb-17
CH057A - Westbound Bypass Structure (exclude Slab)			
N/A	No Milestones in IPS over the next 90 days	N/A	N/A
CH061A: Tunnel A			
CH061A-2170	Issue Notice of Award		22-Nov-16 A
CH061ANTP	NTP CH061A – A Approach	27-Jan-17 A	
CH058A: Harold Structures - B/C Structure/ Catenary Structure			
CH058A-0020	Develop/Finalize 100% Design Documents - CH058A	22-Jun-16 A	28-Feb-17
CH058B: Harold Structures - Eastbound Reroute Structure			
N/A	No Milestones in IPS over the next 90 days	N/A	N/A
FHL01: Harold Stage 1 - LIRR F/A			
FHL01-1150	Complete Trough H2 to H3 (Track A)		03-Apr-17
FHL02: Harold Stage 2 - LIRR F/A			
FHL02-5160	Cutover Harold Emergency Generator		14-Feb-17
FHL02-SI5010	Install Remaining Conduit and Pull boxes in H5-CIL Location	22-Feb-17	27-Feb-17
FHL02.MS.00095	Cutover #L-2 Service for H3, H4 CIL's		1-Feb-17
FHL03: Harold Stage 3 - LIRR F/A			
N/A	No Milestones in IPS over the next 90 days	N/A	N/A
FHA01: Harold Stage 1 - Amtrak F/A			

ACTIVITY ID	ACTIVITY DESCRIPTION	START	FINISH
FHA01-H0229	ET Catenary: FTAB SW H22 - Complete Installation & Electrification		10-Nov-16 A
FHA01-1000	ET Catenary: Complete Catenary Work for Stage 1		6-Jul-17
FHA02: Harold Stage 2 - Amtrak F/A: Balance Work			
FHA02-1060	CH054A - Completed SMUS 1 & 2 / Install New RTU		08-Feb-17
FHA02-1220	Cutover F1/F2 Crossover (771): **WITH NEW SNOW MELTER CASE**	4-Mar-17	5-Mar-17
FHA02-1230	Cutover ZJ1/ZJ2 Crossover (747) **WITH OUT NEW SNOW MELTER**	4-Feb-17	5-Feb-17
FHA02-1350	Cutover DN2 (743B)	20-Jan-18	21-Jan-18
FHA02-1540	Cutover: ZJ1/ZJ2 (747) (signal)	4-Feb-17	5-Feb-17
FHA02-1730	Circuit Revision and Testing for LP1A cutover	29-May-17	23-Jun-17
FHA02-1780	Cutover New RTU with SMUS 1&2	16-Feb-17	1-Mar-17
SUMFHA02-1540	Cutover - ZJ1/ZJ2 (747)		5-Feb-17
SUMFHA02-1560	Cutover - DN2 (743B)		21-Jan-18
FHA03: Harold Stage 3 - Amtrak F/A			
FHA03-1210	Remove Existing Cables and Cases after Cutover Stage 2	06-Jun-14 A	20-Apr-17
VH051A (Part 1): Harold & Point CILs			
VH51C0340	FIAT COMPLETED (w/HTSCS Contract)		1-Apr-17
VH051B (Part 2): Harold Tower SCS			
VH51H0300	As-Built Drawings	01-May-15 A	15-Apr-17
VH051C: 250 Hertz Misroute/ Tunnel Collision Avoidance			
VH051C	VH051C - 250 Hz Track Circuits		09-Jul-23
VH052: Cab Simulator			
VH052	VH052 - Cab Simulator	31-Jan-15 A	09-Jul-23
VHA03: Procure Materials for Harold Stage 3 - Amtrak F/A			
VHA03	VHA03 -Procure Amtrak Materials - Harold Stage 3	05-May-14 A	27-Oct-22

ACTIVITY ID	ACTIVITY DESCRIPTION	START	FINISH
VHA04: Procure Materials for Harold Stage 4 - Amtrak F/A			
N/A	No Milestones in IPS over the next 90 days	N/A	N/A
VHL02: Procure Materials for Harold Stage 2 - LIRR F/A			
VHL02-1010	Procure ZE Crossover	30-Jul-14 A	01-Feb-17
VHL03: Procure Materials for Harold Stage 3 - LIRR F/A			
N/A	No Milestones in IPS over the next 90 days	N/A	N/A
VHL04: Procure Materials for Harold Stage 4 - LIRR F/A			
FML-LIRR	FML05, FML06, FML07 - Cavern,63rd Tunnel Rehab & Bellmouth-LIRR	09-Sep-13 A	30-Jun-17
CM005: Manhattan South Structures			
CM005-TO50	CM005 MS #4 Turnover to CS284 AR (LL Tail Tracks)	11-Oct-16 A	2-Mar-17
CM005-1050	Milestone 5 Final Completion - MS70 (May 6, 2016)		28-Feb-17
CM013A: 55th Street Vent Facility			
CM013A-280	CM13A - MS#3 Final Completion		3-Mar-17
CM004: 245 Park Ave. Entrance & 44th Street Vent Structure			
CM04-C0940	CM004 Contractual Final Completion (ML#2 Date 820 CDs from NTP)		16-Feb-17
CM006: Manhattan North Structures			
CM006-MS2A	CM006 Milestone #2A (55th Street Vent Facility Complete - 702 days from NTP (3/2/16)		30-Jun-17

ACTIVITY ID	ACTIVITY DESCRIPTION	START	FINISH
CM006-MS5	CM006 Milestone #5 (GCT 4 Facility Room - 460 CD from NTP (7/4/2015)		1-Feb-17
CQ032: Plaza Substation & Queens Structures			
CQ032-TO20	CQ032 MS #2 Turnover to Other Contracts: YL Track Level Complete	29-Mar-17	31-Mar-17
FQA65: Loop Interlocking - Amtrak F/A			
FQA65-3010	CH057: Complete Catenary Structure for Loop and T CIHs (65-0) Part 2		01-Feb-17
VQ065: Loop Interlocking CIL (Amtrak)			
VQ065RI	VQ065 RI - Loop Interlocking	12-Sep-12 A	15-Dec-19
CQ033: Mid-Day Storage Yard Facility (Procurement Status TBD)			
CQ033-1020	CQ033 Ready for Procurement	29-Sep-16 A	24-Oct-16 A
CQ033-1030	CQ033 Bid Due Date		23-Feb-17
CS084: Tunnel Systems Package 4 – Traction Power Systems			
CS084-MS001	MILESTONE # 1- Energize Traction Power Substation C08		22-May-19
CS084-MS002	MILESTONE # 2- Energize Traction Power Substation C04 and C05		4-Oct-19
CS084-MS003	MILESTONE # 3- Energize Traction Power Substation C06 and C07		26-Nov-19
CS084-MS004	MILESTONE # 4- Energize Traction Power Substation C01 and C02		2-Oct-19
CS084-MS005	MILESTONE # 5- Energize Traction Power Substation C03		13-Aug-19
CS084-MS006	MILESTONE # 6- Complete Local testing of all substation/Start Integration		11-Feb-20
CS084-MS007	MILESTONE # 7- Substantial completion & Final Completion		13-May-20
CS179: System Package 1 - Facilities Systems			
MILE-63rd	63rd St Tunnel - Complete Start-up and Local Testing		2-Mar-17

ACTIVITY ID	ACTIVITY DESCRIPTION	START	FINISH
CS179-WB1-C10	Completion of WB1 Cable Pulling		20-Mar-17
CSU99: Systems Utility Relocations			
CSU99	CSU99 - Systems Utilities Relocations	30-Sep-14 A	7-Sep-23
VS086: System Package 3 - Signal Equipment Procurement			
VS086-1005	Prepare/Furnish Signal Equipment Catalog Cuts	12-Dec-14 A	31-Jul-17
FSA79: Communication, Controls, Security and Fire Detection - Amtrak F/A			
FSA79	FSA79-Power, Signals, Comm & Security Systs	31-Mar-14 A	01-Feb-17
FS099: Force Account Support			
FS099	FS099 - Force Account Support	30-Sep-14 A	7-Sep-23
LIRR 3.3.7	Take Over Preparation for GCT Building Management System (BMS)	3-Sep-18	11-Jan-20

APPENDIX G – MTA EAST SIDE ACCESS PROJECT – BUY AMERICA STATUS SUMMARY

TABLE G – CONTRACT CS179 (As of March 31, 2017)

Equipment	Current Status
Small HVAC Units for Equipment Rooms	The contractor asserts that the specified low-profile HVAC unit is not available from any US-based HVAC manufacturer and that the manufacturer of the specified unit (Mitsubishi) cannot manufacture the unit in the USA. The MTACC advised that documentation to substantiate a Buy America waiver request was sent to the FTA as of the end of October 2016. The MTA is waiting for a decision regarding the approval of the waiver request.
Video Display Panels	The contractor reports that, despite an exhaustive search, there is no USA-based manufacturer of the main video display panels that will be used in the various control rooms. The MTACC advised that documentation to substantiate a Buy America waiver request to the FTA is being assembled.
Public Address System Speakers	The contractor reports that some of the Public Address (PA) speakers specified in the CS179 contract are no longer manufactured in the USA. As of the end of March 2017, the contractor and the GEC have been unable to identify an American made speaker that meets the specification requirements in the contract.

APPENDIX H – AMTRAK REMAINING ESA ELECTRIC TRACTION CONSTRUCTION*

Table H – Remaining Catenary Construction Start and Finish Dates from IPS Data Date February 1, 2017

Last Activity in IPS ID# String	Scope	IPS Start	IPS Finish	Status
FHA02-1200-3	Install 1,100 LF CA RPR Track	1/17/17	3/15/17	Amtrak completed installation of catenary system over the RPR Track during the week of March 13, 2017.
CH057A-6280	Install 7,100 LF CA WBY Track (or FHA02-1830)	9/14/17	9/14/17	The CH057A contractor began limited catenary pole installation on the WBY Track during 1Q2017.
FHA02-1200-3	Install 2,500 LF CA cutover 771/EWD/RPR Track		3/15/17	Amtrak completed installation of catenary system over the ELIP Track through the #771 crossover during the week of March 13, 2017.
CH057A-2050	Install 6 CAs LIRR/3rd Party Crossovers	11/27/18	12/3/18	None of the predecessor Crossovers have been installed yet.
CH057-C1740	Relocate cross catenary east of 39th St. as result of const. of Tunnels A, B/C, and D	4/12/17	4/13/17	Tunnel B/C predecessor construction has not started yet. Amtrak will install CAs during and after construction is complete.
FHA04-1030	Install 1,000 LF (est.) CA MDSY Sub 4 to Line 2 Connection	11/26/19	12/27/19	Bids for CQ033 were received during the week of February 20, 2017. The contract is scheduled to be awarded in early April 2017. The CQ033 contractor will install catenary poles after it receives NTP prior to Amtrak installation of CAs.
FHA04-1050	Install 3,600 LF CA EBRR Track	6/3/21	8/18/21	CH058B not advertised yet. CH058B to install catenary poles prior to Amtrak installation of CAs.
FHA02-1010	Install CAs 5 other locations FHA02		3/18/18	#771 and #747 crossovers and #743B turnout are complete. Remaining two turnouts, not started.
FHA03-1490	Install CAs 11 other locations FHA03		9/4/19	Not started yet.
FHA04-1020	Install CAs 3 other locations FHA04	10/19/20	11/2/20	Not started yet.
FHA02-1280	Cutover Loop 1A	2/3/18	2/4/18	Amtrak Loop 1A Track construction partially complete. Intermittent Amtrak ET catenary construction continued during 1Q2017.
CH057-CPR4-55101	Wire Transfer for demolition of Montauk Cutoff Platform	8/16/17	9/22/17	Bids for CQ033 were received during the week of February 20, 2017. The contract is scheduled to be awarded in early April 2017. The CQ033 contractor will install 6 catenary poles after it receives NTP prior to Amtrak wire transfer.
FQA65-1092	Install CAs 13 Turnouts in Loop and T Interlockings - FQA65	6/7/23	6/8/23	Procurement of track material for Loop and T Interlocking construction on "hold" by MTACC. Not required until late in program.

CA = Catenary Assembly, CP = Catenary Pole, TO = Turnout, XO= Crossover

* This table is a high level summary of the remaining Electric Traction construction program. The PMOC will maintain details for FTA review.

APPENDIX I – REMAINING HAROLD INTERLOCKING CONSTRUCTION PROGRESS SCHEMATICS

The purpose of Appendix J is to depict, in schematic fashion, the major ESA Force Account and 3rd Party construction elements that remain in Harold Interlocking. At present, three such items will be included in the PMOC's Quarterly Comprehensive Reports. As additional elements are identified, they will be added to the reports. The original three are:

Schematic #1: Remaining Amtrak Harold Overhead Contact System (OCS) to be Installed

This diagram depicts the tracks, crossovers, and turnouts over which Amtrak Force Account Electric Traction personnel will install catenary system components (overhead contact system) in order to operate Amtrak trains through the reconfigured Harold Interlocking. New overhead catenary to be installed is shown in bold red.

Schematic #2: Remaining Harold Third Rail System (3rd Rail) to be Installed

This diagram depicts the tracks, crossovers, and turnouts adjacent to which LIRR and 3rd Party contractors will install Third Rail and components in order to operate expanded LIRR service into the new Grand Central Terminal (GCT). New 3rd Rail to be installed is shown in bold red.

Schematic #3: Status of Harold Interlocking Turnouts and Crossovers to be Installed

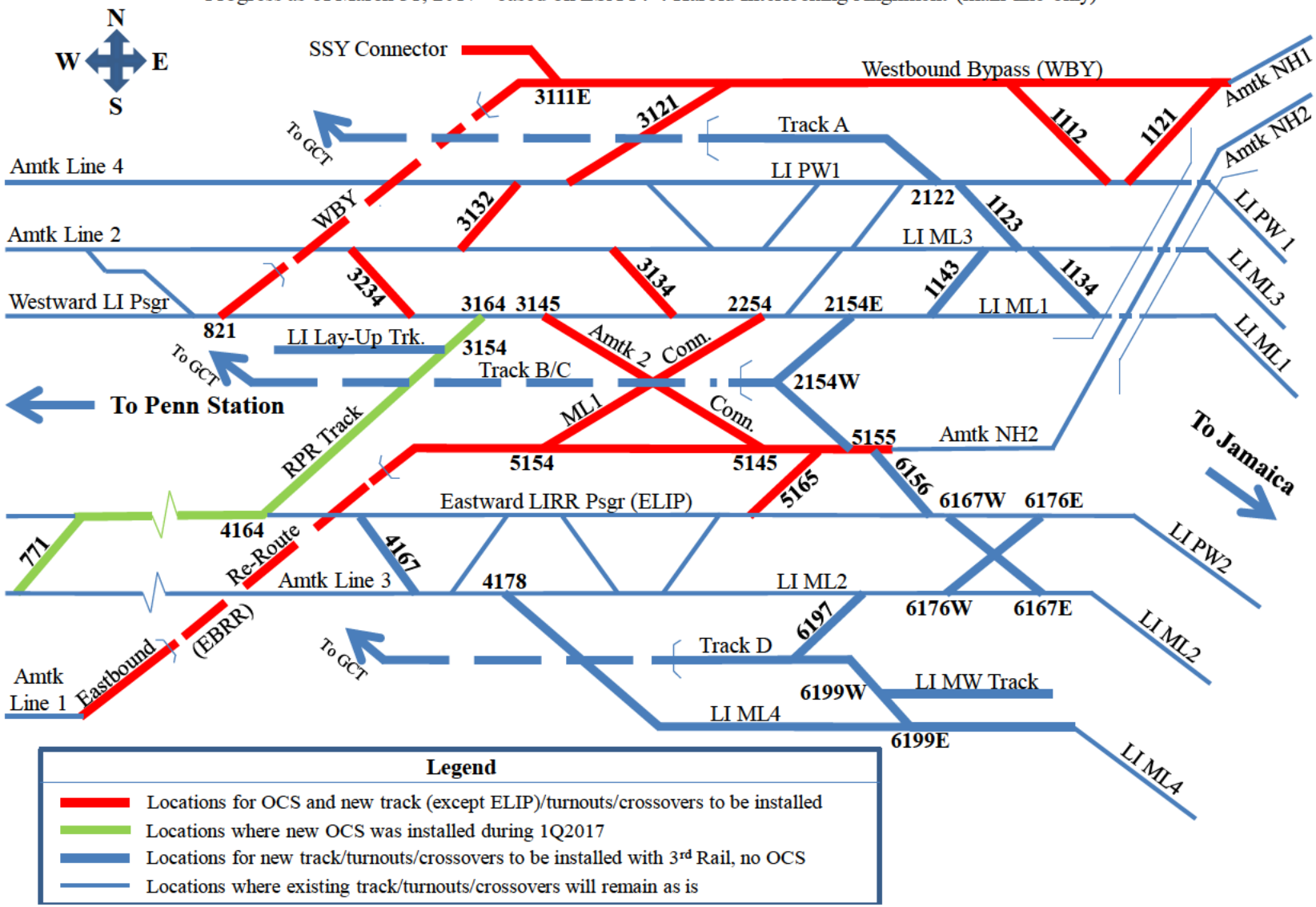
This diagram depicts, along with existing tracks, crossovers, and turnouts that will not be renewed, the present construction status ESA constructed tracks, crossovers, and turnouts that have been or will be installed to make LIRR service into GCT possible. Existing trackage that will not be renewed is shown in non-bold, new crossovers and turnouts already installed by LIRR ESA forces are shown in bold green, and new tracks, crossovers, and turnouts scheduled, but not yet installed, are shown in bold red.

The information shown on these schematics will be updated with each PMOC Quarterly Comprehensive Report and will trace construction progress for that quarter.

Appendix J: Harold Progress Monitoring Schematic

Schematic #1: Remaining Amtrak Harold Overhead Contact System (OCS) to be Installed

Progress as of March 31, 2017 - based on ESA 14-4 Harold Interlocking Alignment (main line only)



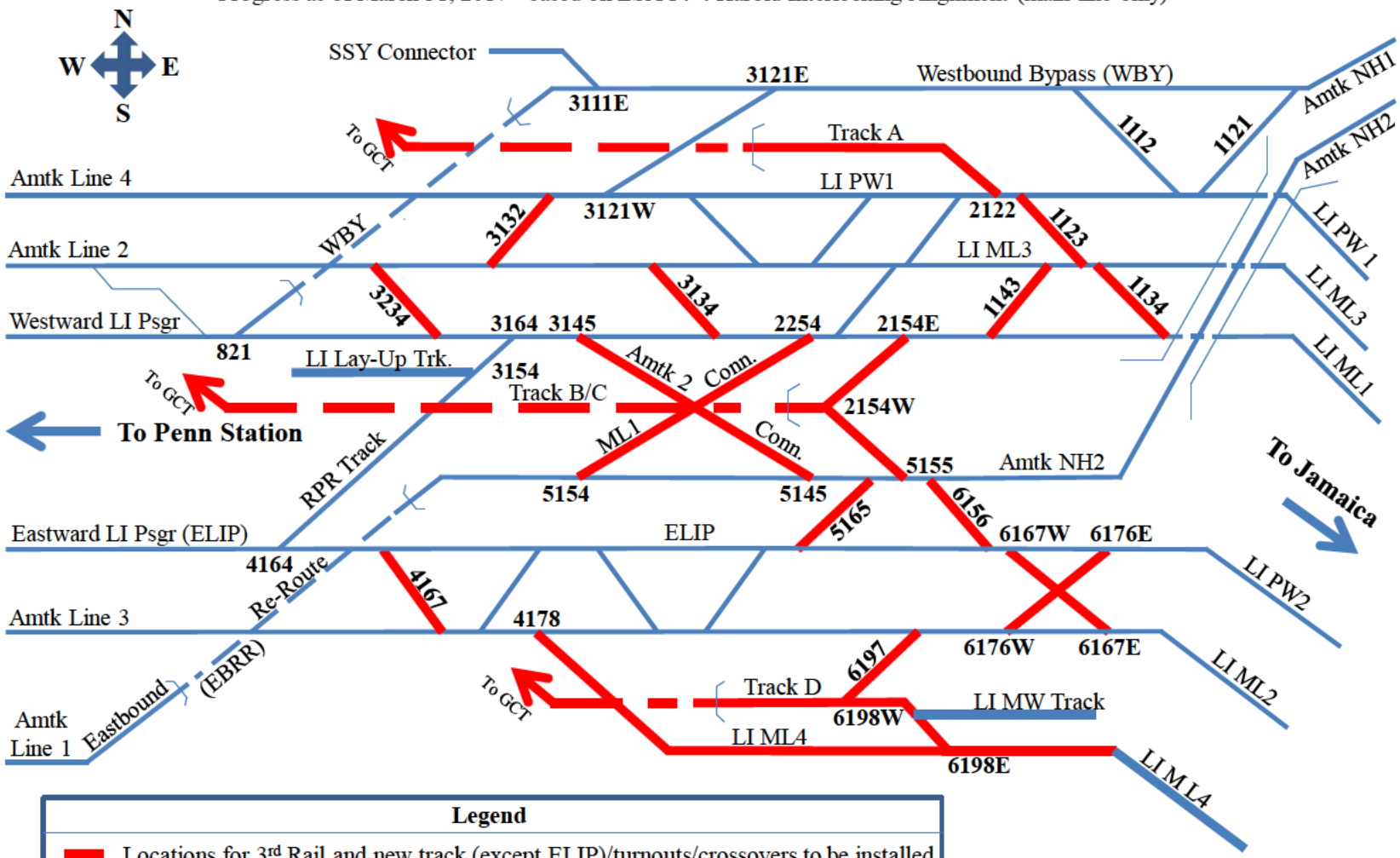
Legend

- Locations for OCS and new track (except ELIP)/turnouts/crossovers to be installed
- Locations where new OCS was installed during 1Q2017
- Locations for new track/turnouts/crossovers to be installed with 3rd Rail, no OCS
- Locations where existing track/turnouts/crossovers will remain as is

Appendix J: Harold Progress Monitoring Schematic

Schematic #2: Remaining Harold Third Rail System (3rd Rail) to be Installed

Progress as of March 31, 2017 - based on ESA 14-4 Harold Interlocking Alignment (main line only)



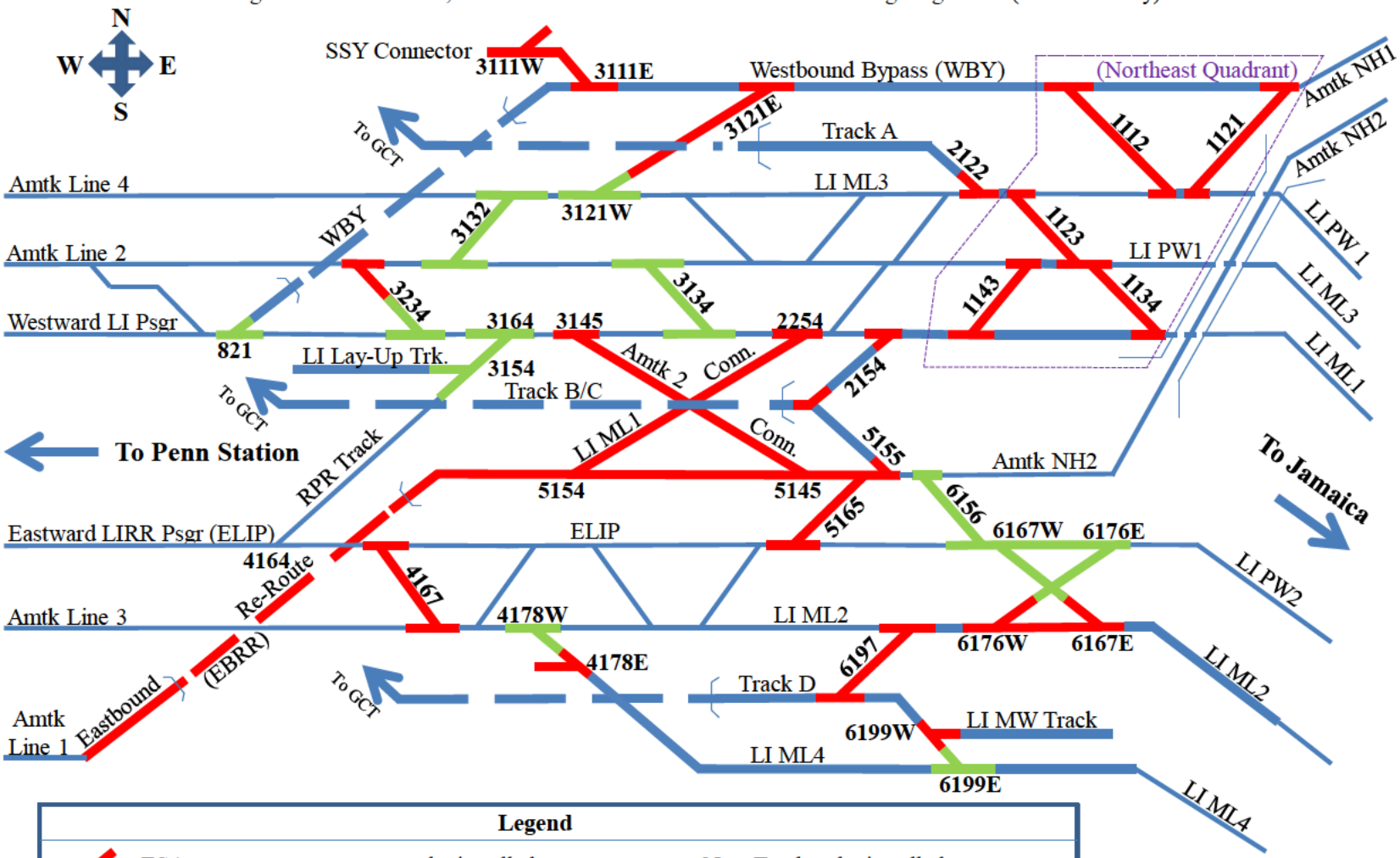
Legend

- Locations for 3rd Rail and new track (except ELIP)/turnouts/crossovers to be installed
- Locations where 3rd Rail and new track were installed during 1Q2017
- Locations for new track/turnouts/crossovers to be installed without OCS
- Existing track/turnouts/crossovers to remain as is or be constructed (WBY & EBRR)

Note: No new 3rd Rail was installed during 1Q2017.

Schm. #3: Status of Harold Interlocking Turnouts, Crossovers, and Tracks to be Installed

Progress as of March 31, 2017 - based on ESA 14-4 Harold Interlocking Alignment (main line only)



Legend

- ESA turnouts or crossovers to be installed
- ESA turnouts or crossovers already installed
- New Track to be installed
- Existing Track to remain as is

Note: No new crossovers, turnouts, or track were installed during 1Q2017.

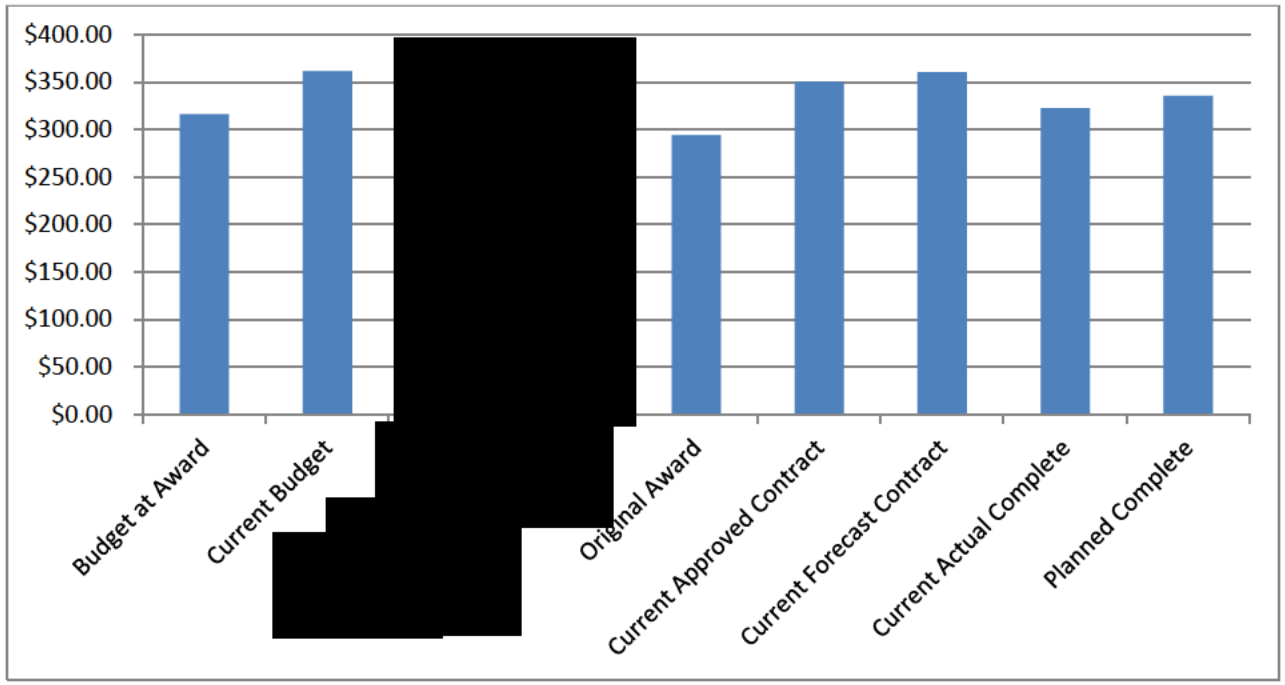
APPENDIX J – COST PERFORMANCE

APPENDIX J – COST PERFORMANCE - CM006

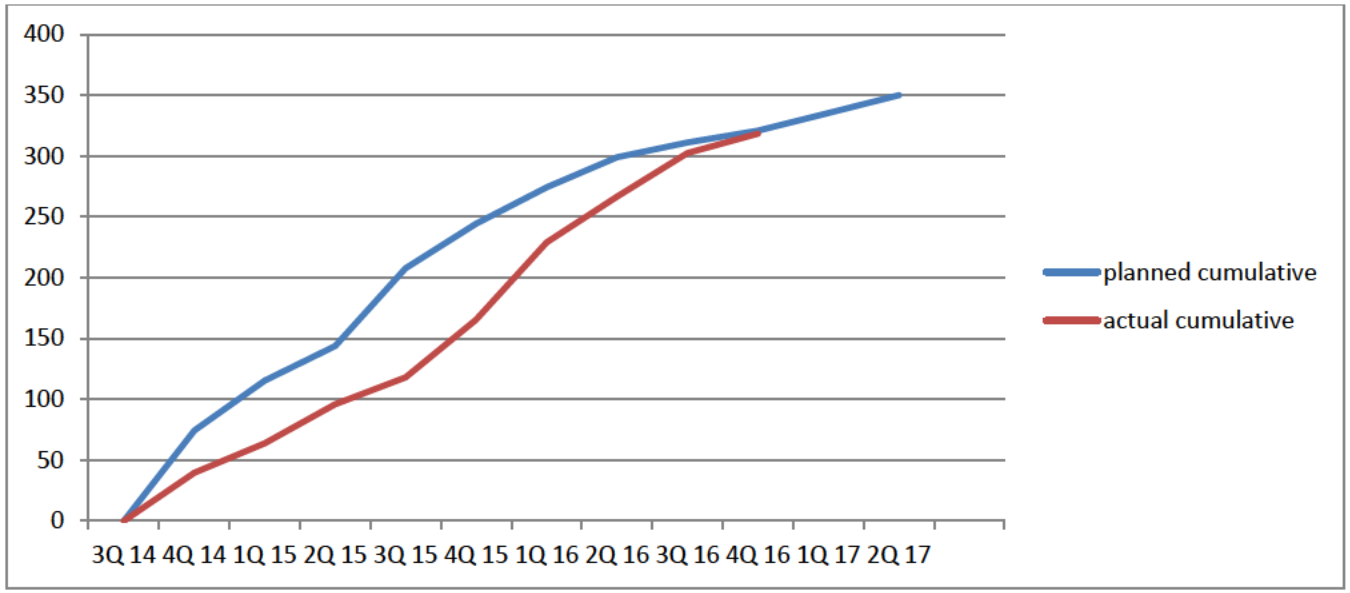
CM006 - Manhattan North Structures - at Jan 2017

1	2	3	4	5	6	7	8
Budget at Award $M	**Current Budget $M**	**Change from Original to Current $M**	**Contract at Award $M**	**Current Approved Contract $M**	**Change from Original to Current $M**	**Current Forecast $M**	**Change from Current Forecast to Budget at Award $M**
$316.3	$361.6	**(2-1)** $45.3	$294.2	$350.1	**(5-4)** $55.9	$360.3	**(7-1)** $44.0
Percent Complete		**Actual Progress Last 12 Months**		**Actual Progress Last 6 Months**		**Average Required Progress to reach forecast SC**	
Planned	**Actual**	**Total**	**Avg/Mo**	**Total**	**Avg/Mo**		
95.9%	92.2%	39.76%	3.31%	11.88%	1.98%	1.56% per month	

CM006 - Manhattan North Structures - at Jan 2017
(vert axis in $M)



CM006 - Manhattan North Structures - at 4Q2016
(vert axis in $M)



APPENDIX J – COST PERFORMANCE - CM007

CM007 - GCT Caverns - at Jan 2017

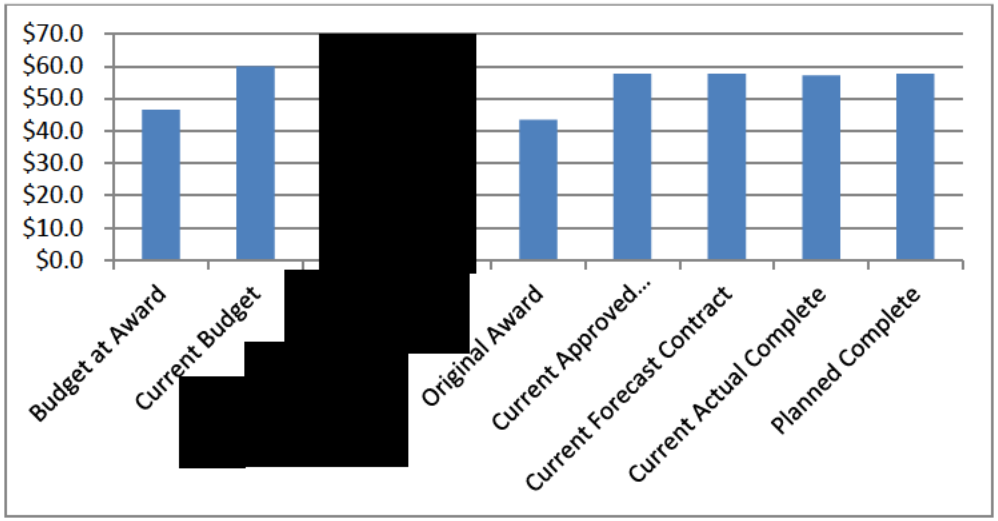
1	2	3	4	5	6	7	8
Budget at Award $M	**Current Budget $M**	**Change from Original to Current $M**	**Contract at Award $M**	**Current Approved Contract $M**	**Change from Original to Current $M**	**Current Forecast $M**	**Change from Current Forecast to Budget at Award $M**
$712.3	$712.3	**(2-1)** $0.0	$663.1	$663.1	**(5-4)** $0.0	$712.3	**(7-1)** $0.0
Percent Complete		**Actual Progress Last 12 Months**		**Actual Progress Last 6 Months**		**Average Required Progress to reach forecast SC**	
Planned	**Actual**	**Total**	**Avg/Mo**	**Total**	**Avg/Mo**		
N/A	7.1%	N/A	N/A	5.34%	0.89%	1.94% per month	

APPENDIX J – COST PERFORMANCE – CM014A

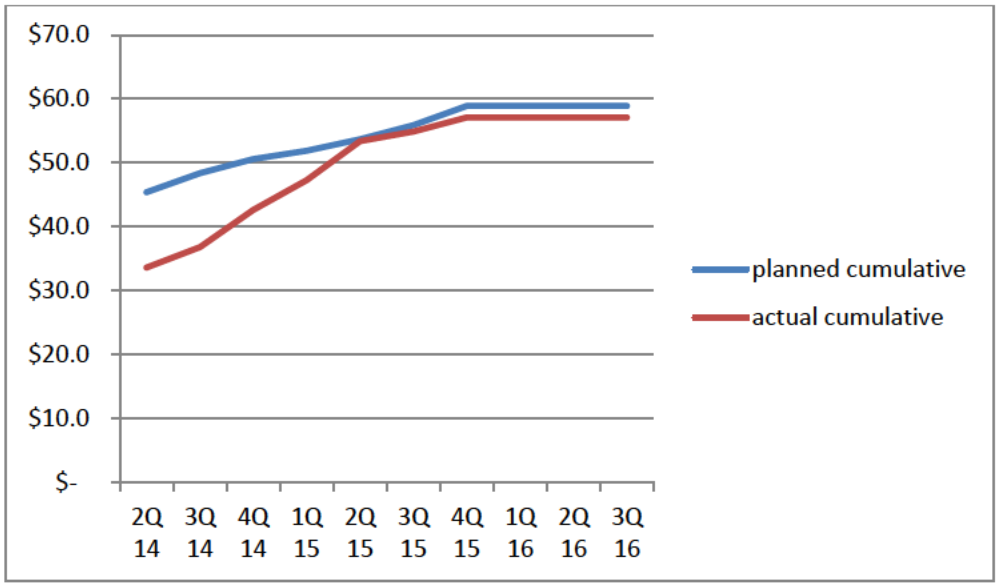
CM014A - GCT Concourse / Facilities Fit Out Early Work - at Jan 2017

1	2	3	4	5	6	7	8
Budget at Award $M	**Current Budget $M**	**Change from Original to Current $M**	**Contract at Award $M**	**Current Approved Contract $M**	**Change from Original to Current $M**	**Current Forecast $M**	**Change from Current Forecast to Budget at Award $M**
$46.5	$60.0	**(2-1)** $13.5	$43.5	$57.7	**(5-4)** $14.2	$57.2	**(7-1)** $10.7
Percent Complete		**Actual Progress Last 12 Months**		**Actual Progress Last 6 Months**		**Average Required Progress to reach forecast SC**	
Planned	**Actual**	**Total**	**Avg/Mo**	**Total**	**Avg/Mo**		
100.0%	97.1%	3.8%	0.32%	0.1%	0.02%	N/A	

CM014A - GCT Concourse / Facilities Fit Out Early Work - at January 2017
(vert axis in $M)



CM014A - GCT Concourse / Facilities Fit Out Early Work - at 4Q2016
(vert axis in $M)

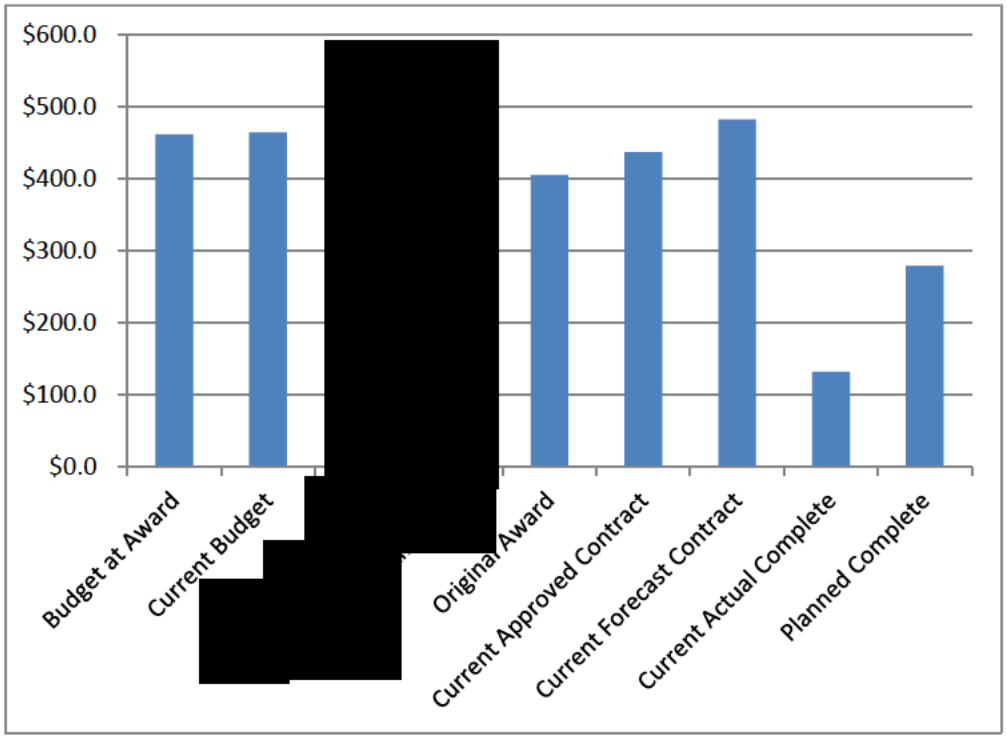


APPENDIX J – COST PERFORMANCE – CM014B

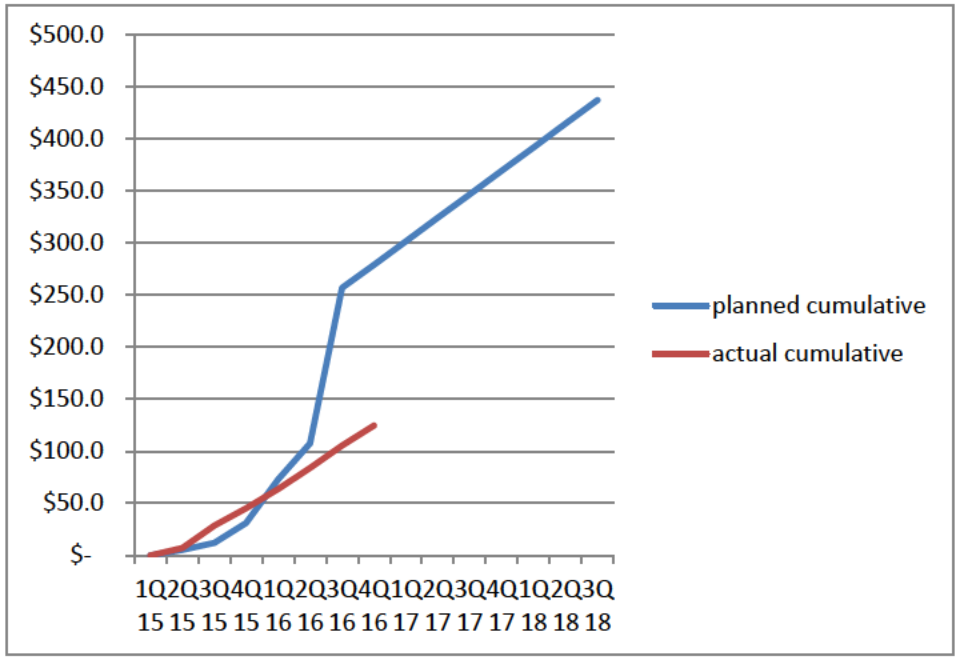
CM014B - GCT Concourse / Facilities Fit Out - at Jan 2017

1	2	3	4	5	6	7	8
Budget at Award $M	**Current Budget $M**	**Change from Original to Current $M**	**Contract at Award $M**	**Current Approved Contract $M**	**Change from Original to Current $M**	**Current Forecast $M**	**Change from Current Forecast to Budget at Award $M**
$461.1	$463.6	**(2-1)** $2.5	$404.6	$436.9	**(5-4)** $32.3	$482.1	**(7-1)** $21.0
Percent Complete		**Actual Progress Last 12 Months**		**Actual Progress Last 6 Months**		**Average Required Progress to reach forecast SC**	
Planned	**Actual**	**Total**	**Avg/Mo**	**Total**	**Avg/Mo**		
78.5%	30.3%	18.49%	1.54%	9.79%	1.63%	2.5% per month	

CM014B - GCT Concourse / Facilities Fit Out - at January 2017
(vert axis in $M)



CM014B - GCT Concourse & Facilities Fit-Out - at 4Q2016
(vert axis in $M)

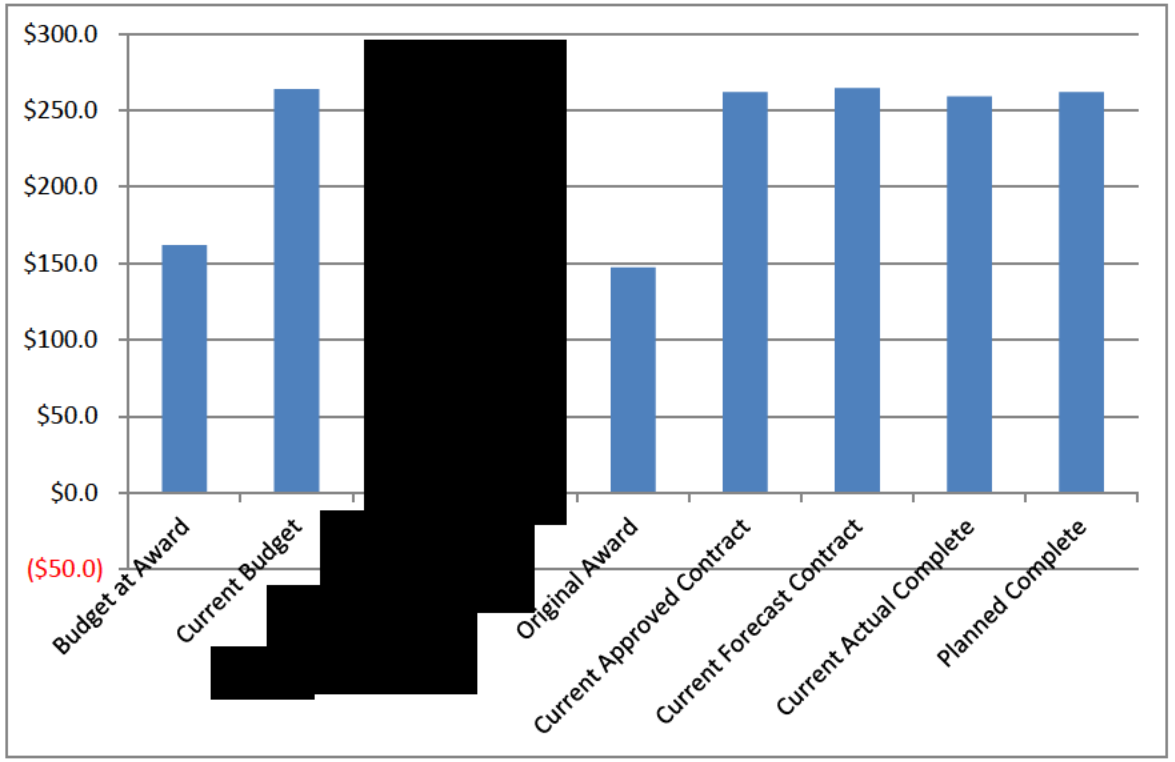


APPENDIX J – COST PERFORMANCE – CQ032

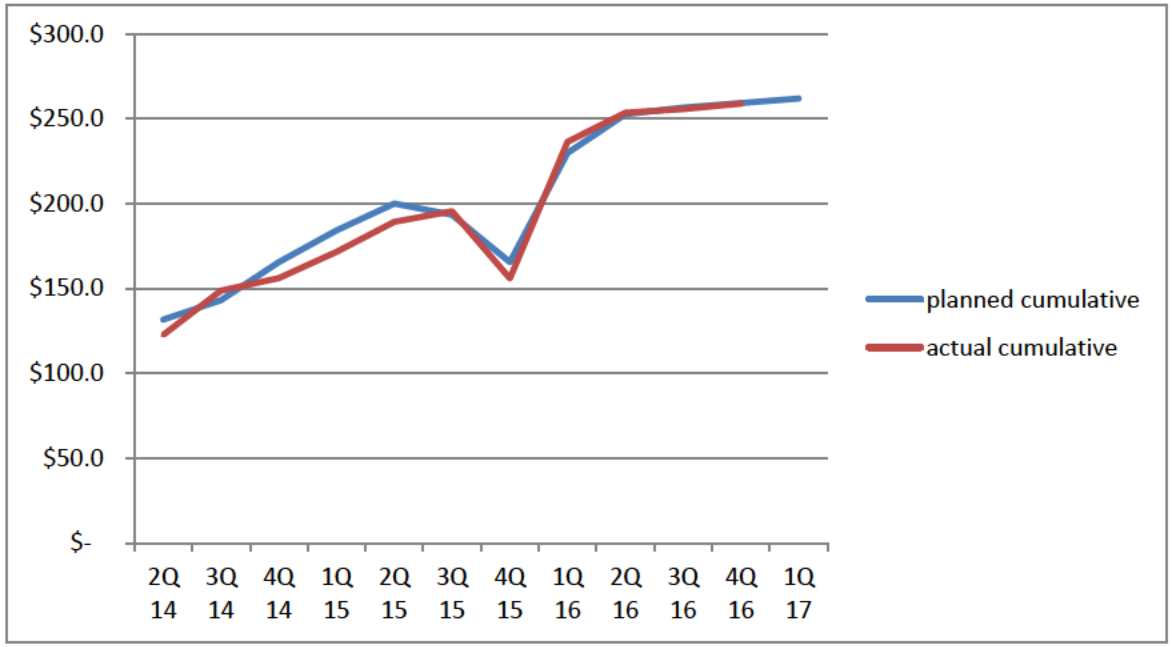
CQ032 - Plaza Substation & Queens Structures - at Jan 2017

1	2	3	4	5	6	7	8
Budget at Award $M	**Current Budget $M**	**Change from Original to Current $M**	**Contract at Award $M**	**Current Approved Contract $M**	**Change from Original to Current $M**	**Current Forecast $M**	**Change from Current Forecast to Budget at Award $M**
$162.1	$263.9	**(2-1)** $101.8	$147.4	$262.0	**(5-4)** $114.6	$264.7	**(7-1)** $102.6
Percent Complete		**Actual Progress Last 12 Months**		**Actual Progress Last 6 Months**		**Average Required Progress to reach forecast SC**	
Planned	**Actual**	**Total**	**Avg/Mo**	**Total**	**Avg/Mo**		
100.0%	98.9%	13.21%	1.10%	1.60%	0.27%	1.10% per month	

CQ032 - Plaza Substation & Queens Structures - at January 2017
(vert axis in $M)



CQ032 - Plaza Substation & Queens Structures - at 4Q2016
(vert axis in $M)



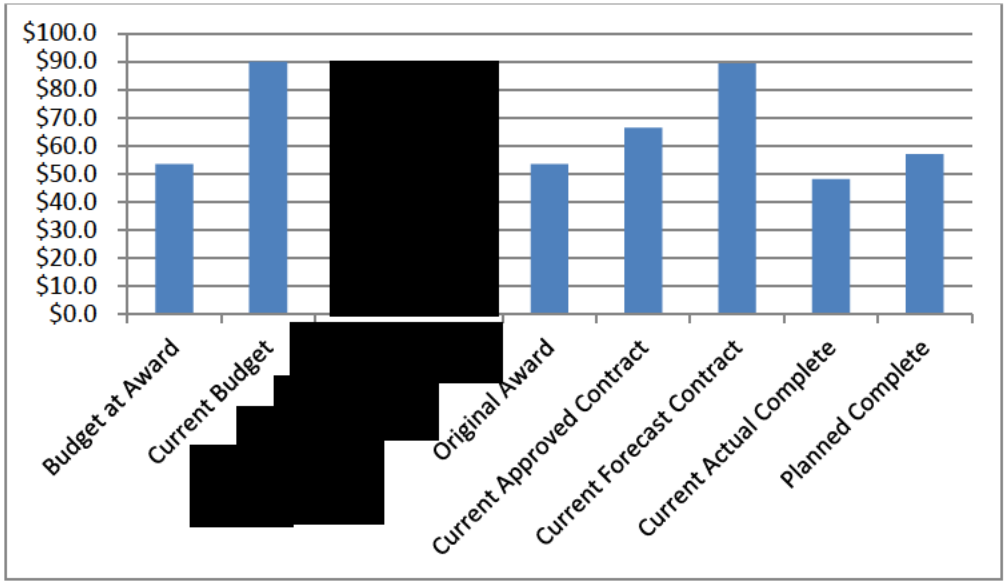
APPENDIX J – COST PERFORMANCE – CH057

CH057 - Harold Structures Part 3 - at Jan 2017

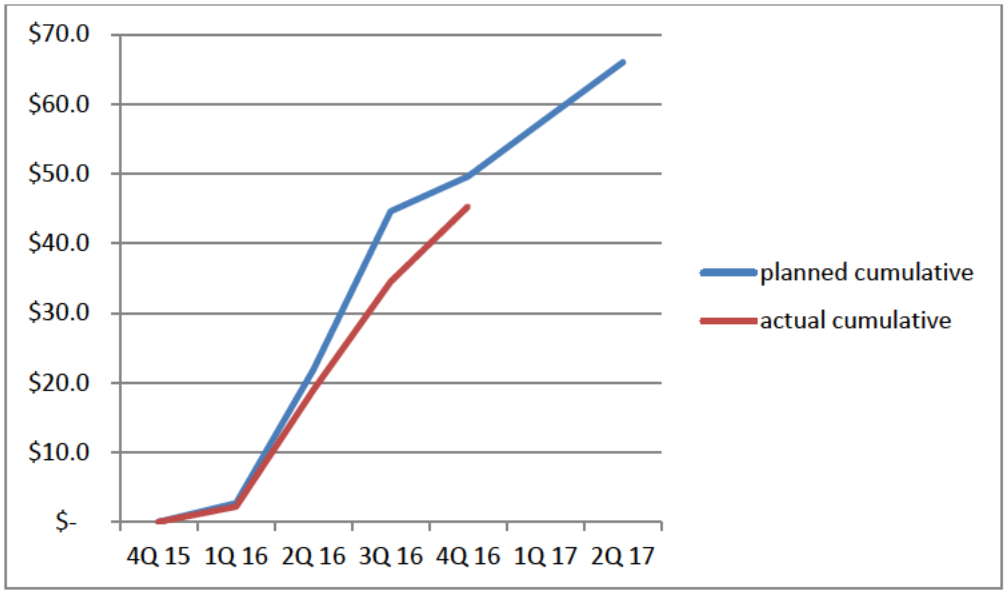
1	2	3	4	5	6	7	8
Budget at Award $M	**Current Budget $M**	**Change from Original to Current $M**	**Contract at Award $M**	**Current Approved Contract $M**	**Change from Original to Current $M**	**Current Forecast $M**	**Change from Current Forecast to Budget at Award $M**
$53.4	$89.9	**(2-1)** $36.5	$53.4	$66.4	**(5-4)** $13.0	$89.3 *	**(7-1)** $35.9
Percent Complete		**Actual Progress Last 12 Months**		**Actual Progress Last 6 Months**		**Average Required Progress to reach forecast SC**	
Planned	**Actual**	**Total**	**Avg/Mo**	**Total**	**Avg/Mo**		
85.7%	72.5%	72.44%	6.04%	34.64%	5.77%	5.50% per month	

*This forecast includes $1,895,000 for the Montauk Cutoff Catenaries for CQ033 from CH058A.

CH057 - Harold Structures Part 3 - at January 2017
(vert axis in $M)



CH057 - Harold Structures Part 3 - at 4Q2016
(vert axis in $M)



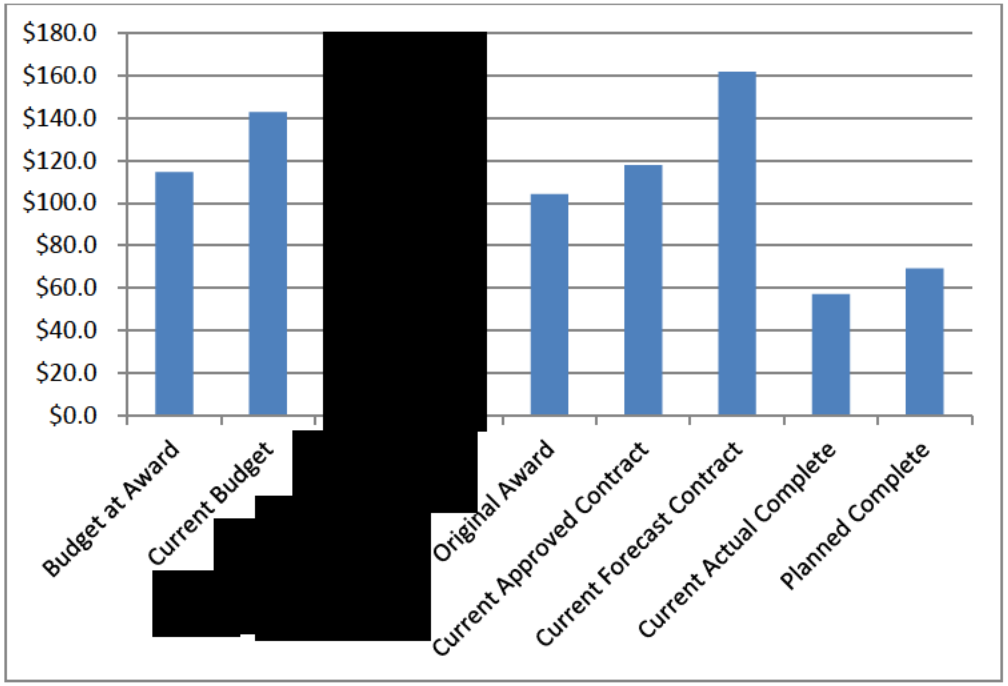
APPENDIX J – COST PERFORMANCE – CH057A

CH057A - Westbound Bypass - at Jan 2017 (Regional Investement in red**)**

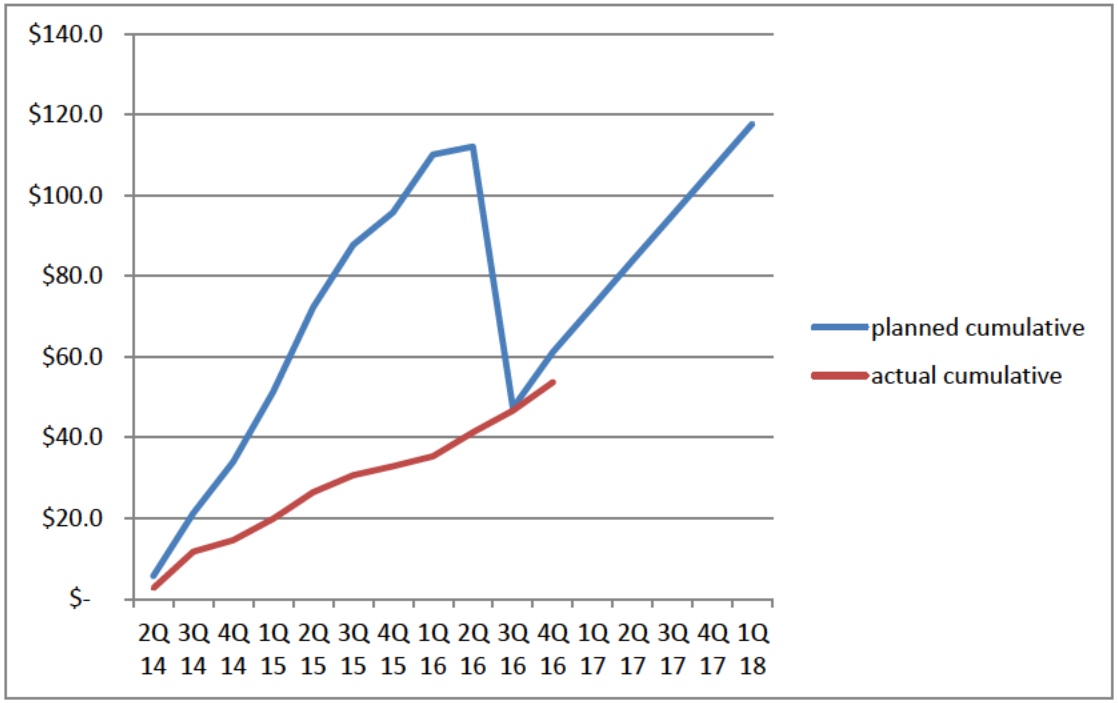
1	2	3	4	5	6	7	8
Budget at Award $M	**Current Budget $M**	**Change from Original to Current $M**	**Contract at Award $M**	**Current Approved Contract $M**	**Change from Original to Current $M**	**Current Forecast $M**	**Change from Current Forecast to Budget at Award $M**
		(2-1)			**(5-4)**		**(7-1)**
$114.7	$142.8	$28.1	$104.3	$117.8	$13.5	$161.8	$47.1
$113.6	$132.9	$19.3	$103.3	$110.1	$6.8	$153.4	$39.8
Percent Complete		**Actual Progress Last 12 Months**		**Actual Progress Last 6 Months**		**Average Required Progress to reach forecast SC**	
Planned*	**Actual***	**Total**	**Avg/Mo**	**Total**	**Avg/Mo**		
58.9%	48.6%	20.03%	1.67%	12.31%	2.05%	3.43% per month	

*As per January 2017 ESA MPR

CH057A - Westbound Bypass - at January 2017 (94.5% Regional Investment)
(vert axis in $M)



CH057A - Westbound Bypass - at 4Q2016
(vert axis



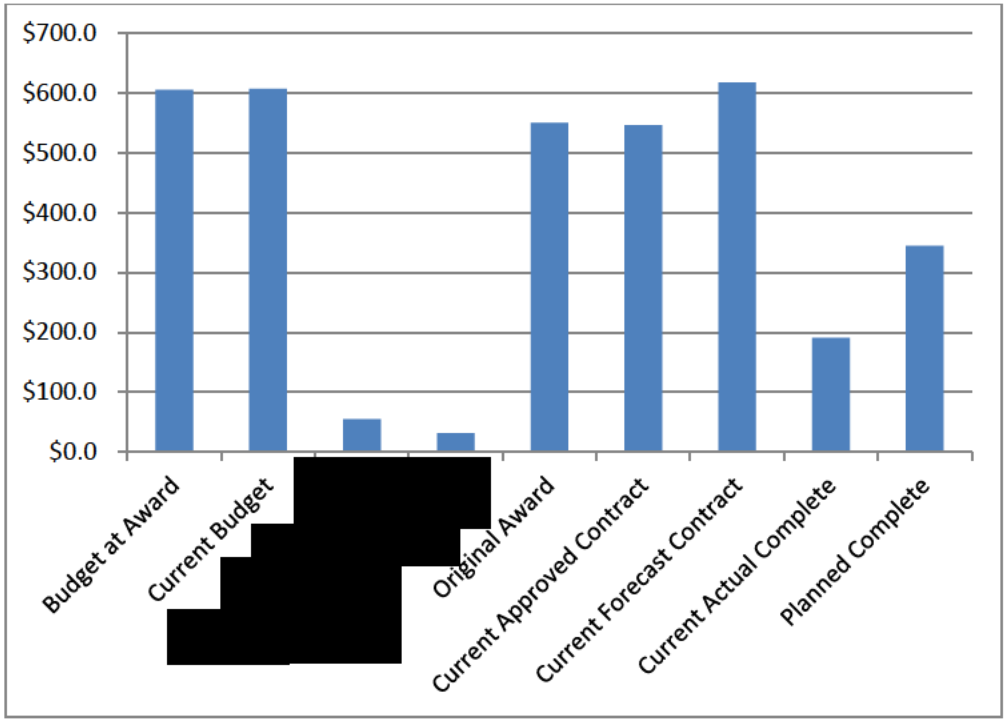
APPENDIX J – COST PERFORMANCE – CS179

CS179 - Systems Package 1 - at Jan 2017

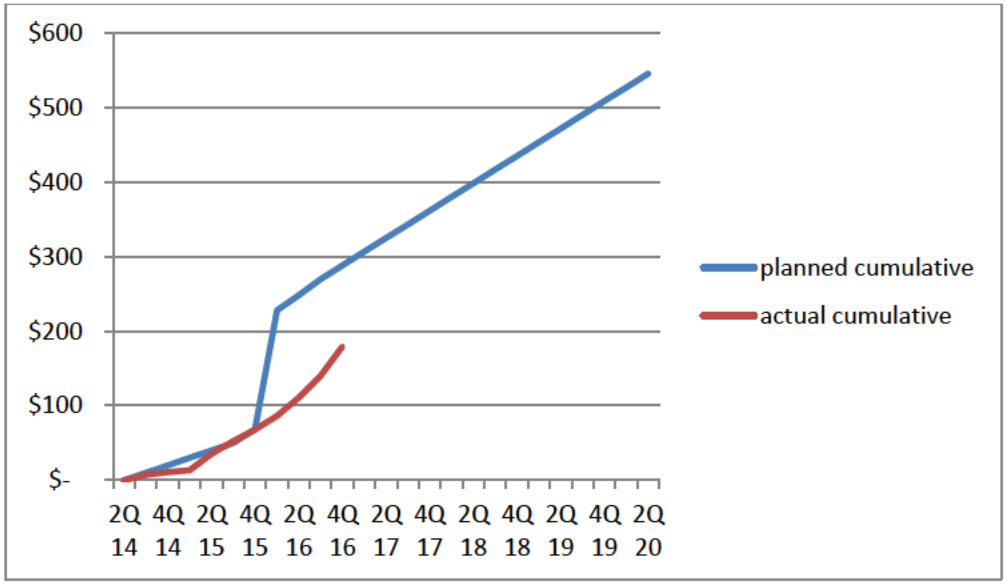
1	2	3	4	5	6	7	8
Budget at Award $M	**Current Budget $M**	**Change from Original to Current $M**	**Contract at Award $M**	**Current Approved Contract $M**	**Change from Original to Current $M**	**Current Forecast $M**	**Change from Current Forecast to Budget at Award $M**
$605.4	$606.9	**(2-1)** $1.5	$550.4**	$546.3	**(5-4)** ($4.1) (options + mods)	$618.0	**(7-1)** $12.6
Percent Complete		**Actual Progress Last 12 Months**		**Actual Progress Last 6 Months**		**Average Required Progress to reach forecast SC**	
Planned	**Actual**	**Total**	**Avg/Mo**	**Total**	**Avg/Mo**		
63.0%	34.9%	22.11%	1.84%	13.22%	2.20%	1.59% per month	

** Contract at Award ($333.6M + Planned Options ($216.8 M) = $550.4 M

CS179 - Systems Package 1 - at January 2017
(vert axis in $M)



CS179 - Systems Package 1 - at 4Q2016
(vert axis in $M)

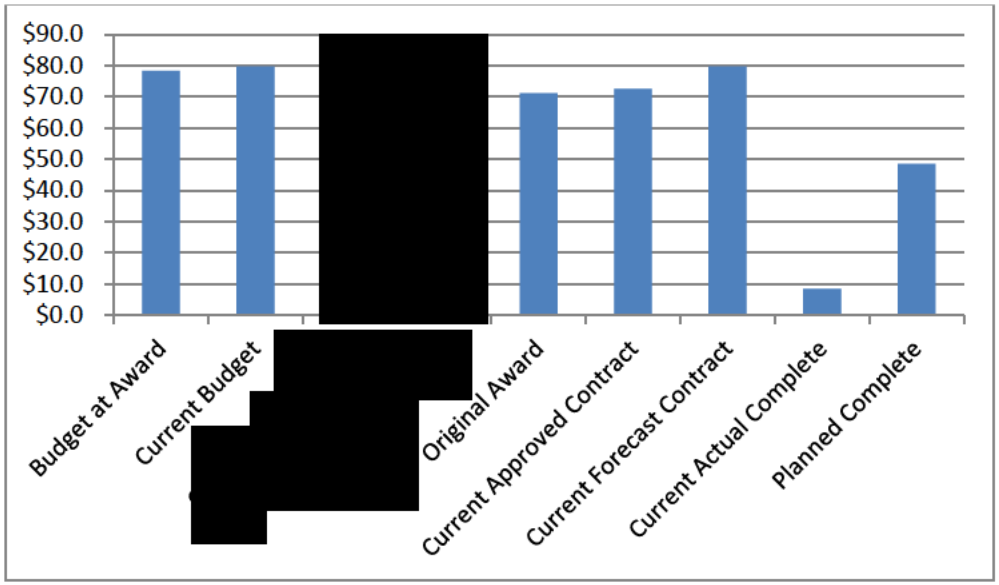


APPENDIX J – COST PERFORMANCE – CS084

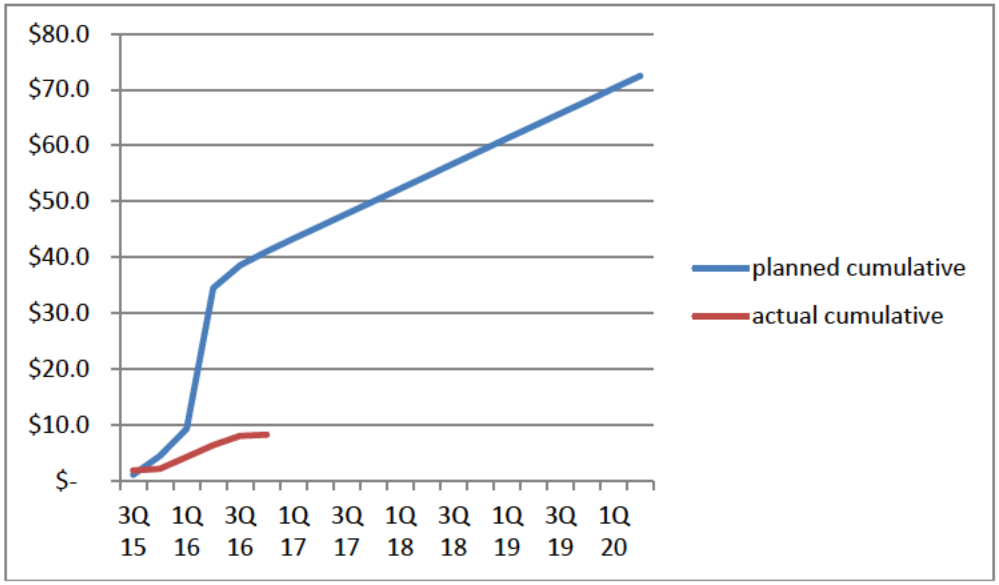
CS084 - Tunnel Systems Package 4 - at Jan 2017

1	2	3	4	5	6	7	8
Budget at Award $M	**Current Budget $M**	**Change from Original to Current $M**	**Contract at Award $M**	**Current Approved Contract $M**	**Change from Original to Current $M**	**Current Forecast $M**	**Change from Current Forecast to Budget at Award $M**
$78.4	$79.7	**(2-1)** $1.3	$71.2	$72.5	**(5-4)** $1.3	$79.7	**(7-1)** $1.3
Percent Complete		**Actual Progress Last 12 Months**		**Actual Progress Last 6 Months**		**Average Required Progress to reach forecast SC**	
Planned	**Actual**	**Total**	**Avg/Mo**	**Total**	**Avg/Mo**		
66.90%	11.60%	7.72%	0.64%	0.97%	0.16%	2.24% per month	

CS084 - Tunnel Systems Package 4 - at January 2017
(vert axis in $M)



CS084 - Tunnel Systems Package 4 - at 4Q2016
(vert axis in $M)

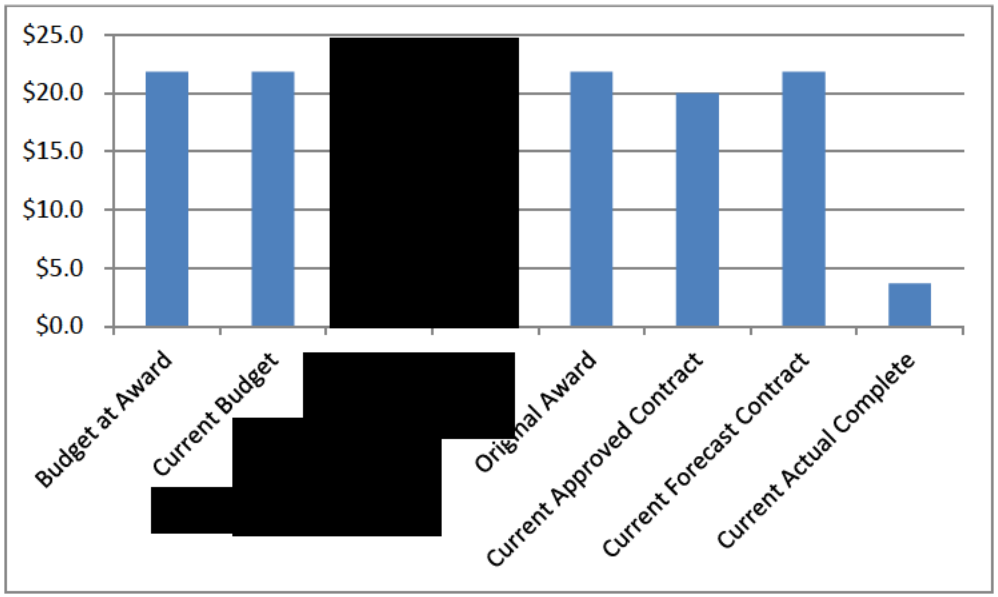


APPENDIX J – COST PERFORMANCE – VS086

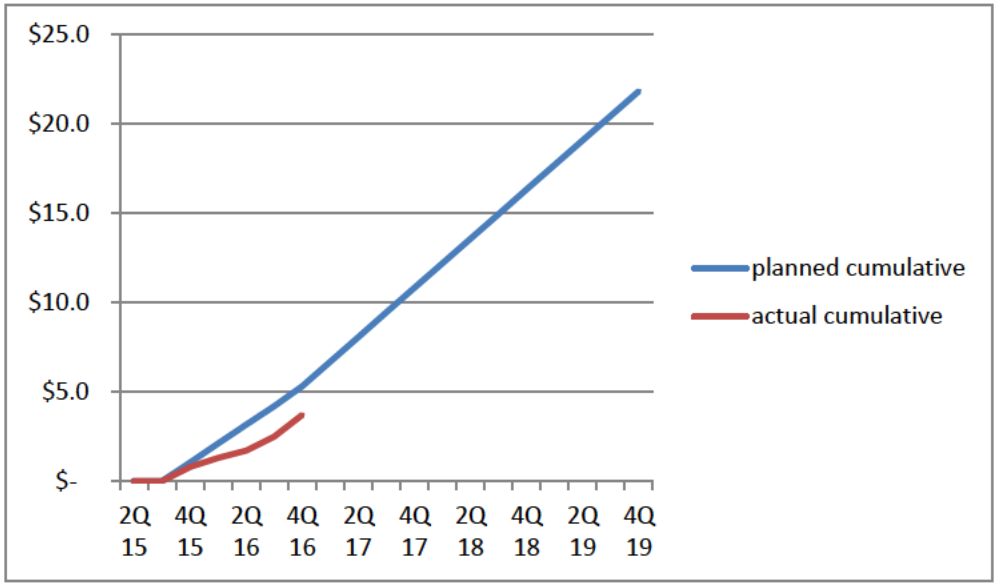
VS086 - Systems Package 3: Signal Equipment Procurement - at Jan 2017

1	2	3	4	5	6	7	8
Budget at Award $M	**Current Budget $M**	**Change from Original to Current $M**	**Contract at Award $M**	**Current Approved Contract $M**	**Change from Original to Current $M**	**Current Forecast $M**	**Change from Current Forecast to Budget at Award $M**
$21.8	$21.8	**(2-1)** $0.0	$21.8	$20.0	**(5-4)** ($1.8)	$21.8	**(7-1)** $0.0
Percent Complete		**Actual Progress Last 12 Months**		**Actual Progress Last 6 Months**		**Average Required Progress to reach forecast SC**	
Planned	**Actual**	**Total**	**Avg/Mo**	**Total**	**Avg/Mo**		
N/A	16.90%	13.23%	1.10%	5.43%	0.91%	4.05% per month	

VS086 - Systems Package 3: Signal Equipment Procurement - at January 2017
(vert axis in $M)



VS086 - Systems Package 3: Signal Equipment Procurement - at 4Q2016
(vert axis in $M)

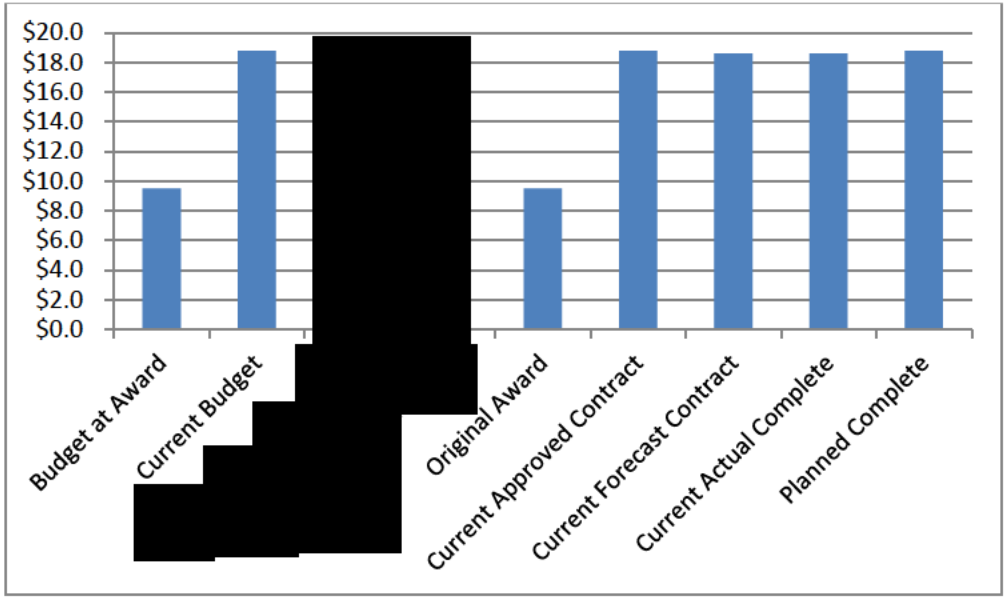


APPENDIX J – COST PERFORMANCE – FHA01

FHA01 - Harold Stage 1 - AMTRAK Harold Stage 1 FA at Jan 2017

1	2	3	4	5	6	7	8
Budget at Award $M	**Current Budget $M**	**Change from Original to Current $M**	**Contract at Award $M**	**Current Approved Contract $M**	**Change from Original to Current $M**	**Current Forecast $M**	**Change from Current Forecast to Budget at Award $M**
$9.5	$18.8	**(2-1)** $9.3	$9.5	$18.8	**(5-4)** $9.3	$18.6	**(7-1)** $9.1
Percent Complete		**Actual Progress Last 12 Months**		**Actual Progress Last 6 Months**		**Average Required Progress to reach forecast SC**	
Planned	**Actual**	**Total**	**Avg/Mo**	**Total**	**Avg/Mo**		
100.0%	98.9%	0.1%	0.01%	0.1%	0.02%	0.22% per month	

FHA01 - Harold Stage 1 - AMTRAK FA
(vert axis in $M)

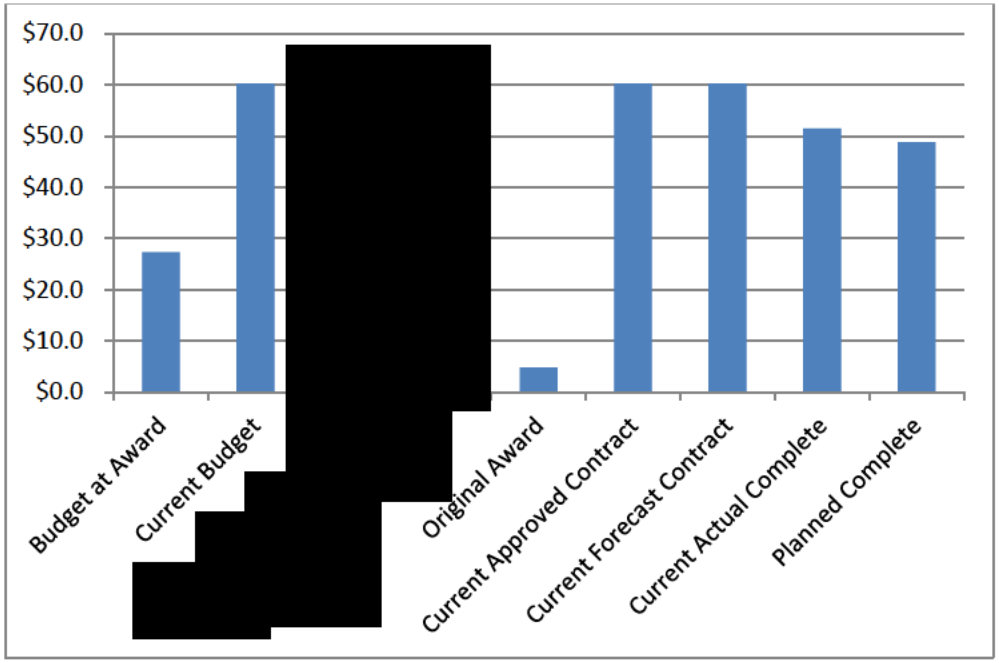


APPENDIX J – COST PERFORMANCE – FHA02

FHA02 - Harold Stage 2 - AMTRAK Harold Stage 2 FA at Jan 2017

1	2	3	4	5	6	7	8
Budget at Award $M	**Current Budget $M**	**Change from Original to Current $M**	**Contract at Award $M**	**Current Approved Contract $M**	**Change from Original to Current $M**	**Current Forecast $M**	**Change from Current Forecast to Budget at Award $M**
$27.3	$60.2	**(2-1)** $32.9	$4.8	$60.2	**(5-4)** $55.4	$60.2	**(7-1)** $32.9
Percent Complete		**Actual Progress Last 12 Months**		**Actual Progress Last 6 Months**		**Average Required Progress to reach forecast SC**	
Planned	**Actual**	**Total**	**Avg/Mo**	**Total**	**Avg/Mo**		
81.0%	85.6%	10.13%	0.84%	1.33%	0.22%	9.29% per month	

FHA02 - Harold Stage 2 - AMTRAK Harold Stage 2 FA at Jan 2017
(vert axis in $M)



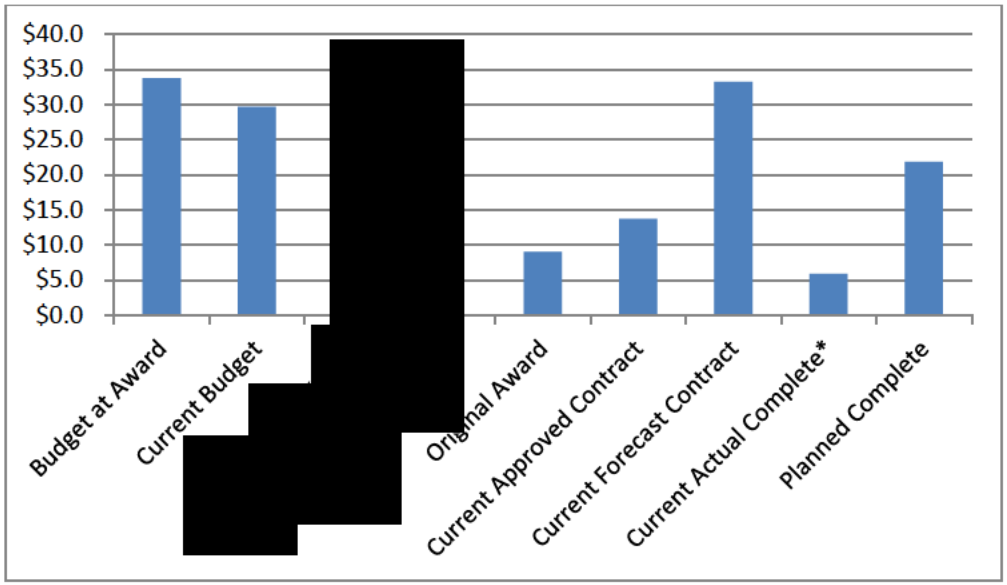
APPENDIX J – COST PERFORMANCE – FQA65

FQA65 - AMTRAK Loop Interlocking CIL - Regional Investment

1	2	3	4	5	6	7	8
Budget at Award $M	**Current Budget $M**	**Change from Original to Current $M**	**Contract at Award $M**	**Current Approved Contract* $M**	**Change from Original to Current $M**	**Current Forecast $M**	**Change from Current Forecast to Budget at Award $M**
$33.8	$29.7	**(2-1)** ($4.1)	$9.0	$13.7	**(5-4)** $4.7	$33.3	**(7-1)** ($0.5)
Percent Complete		**Actual Progress Last 12 Months**		**Actual Progress Last 6 Months**		**Average Required Progress to reach forecast SC**	
Planned	**Actual**	**Total**	**Avg/Mo**	**Total**	**Avg/Mo**		
73.7%	17.0%	6.7%	0.56%	0.68%	0.11%	3.73%	

* Current Approved Contract does not include full scope.

FQA65 - AMTRAK Loop Interlocking CIL - Regional Investment
(vert axis in $M)

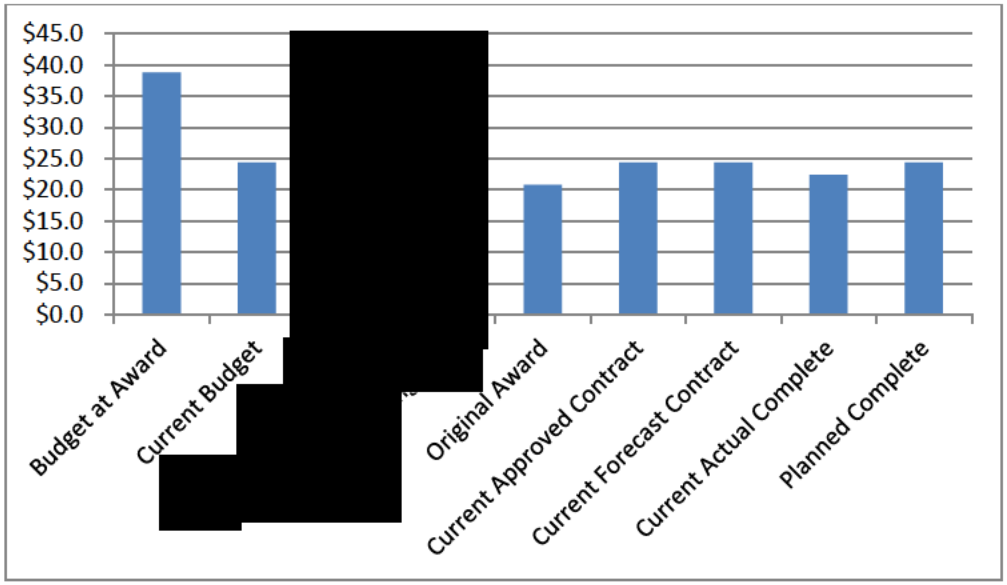


APPENDIX J – COST PERFORMANCE – FHL01

FHL01 - Harold Stage 1 - LIRR FA- January 2017

1	2	3	4	5	6	7	8
Budget at Award $M	**Current Budget $M**	**Change from Original to Current $M**	**Contract at Award $M**	**Current Approved Contract $M**	**Change from Original to Current $M**	**Current Forecast $M**	**Change from Current Forecast to Budget at Award $M**
$38.8	$24.4	**(2-1)** ($14.4)	$20.8	$24.4	**(5-4)** $3.6	$24.4	**(7-1)** ($14.4)
Percent Complete		**Actual Progress Last 12 Months**		**Actual Progress Last 6 Months**		**Average Required Progress to reach forecast SC**	
Planned	**Actual**	**Total**	**Avg/Mo**	**Total**	**Avg/Mo**		
100.0%	91.9%	4.92%	0.41%	4.51%	0.75%	1.35% per month	

FHL01 - Harold Stage 1 - LIRR FA- January 2017
(vert axis in $M)



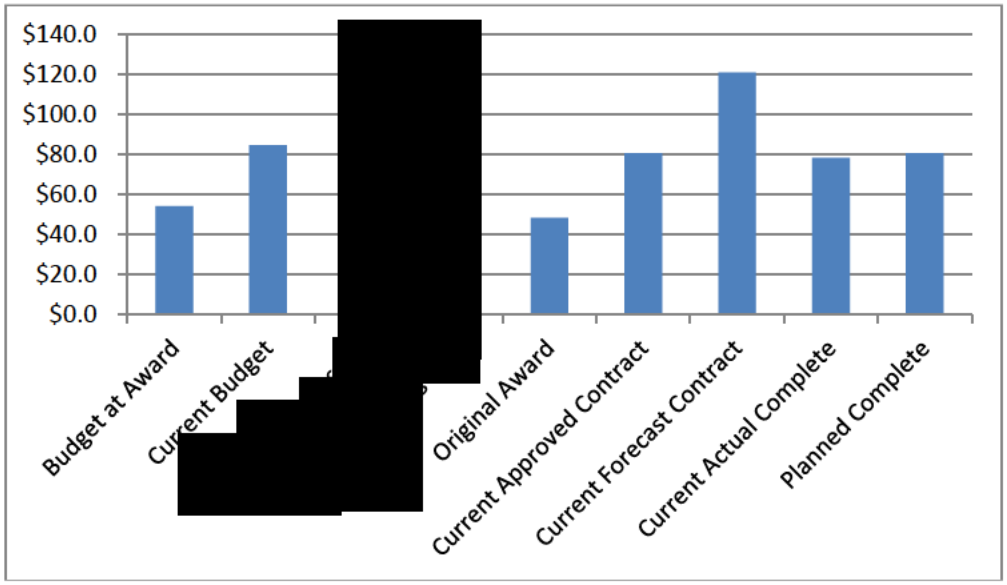
APPENDIX J – COST PERFORMANCE – FHL02

FHL02 - Harold Stage 2 - LIRR FA- January 2017

1	2	3	4	5	6	7	8
Budget at Award $M	**Current Budget $M**	**Change from Original to Current $M**	**Contract at Award $M**	**Current Approved Contract $M**	**Change from Original to Current $M**	**Current Forecast $M**	**Change from Current Forecast to Budget at Award $M**
$54.1	$84.6	**(2-1)** $30.5	$48.2	$80.7	**(5-4)** $32.5	$120.9*	**(7-1)** $66.8
Percent Complete		**Actual Progress Last 12 Months**		**Actual Progress Last 6 Months**		**Average Required Progress to reach forecast SC**	
Planned	**Actual**	**Total**	**Avg/Mo**	**Total**	**Avg/Mo**		
100.0%	92.5%	15.37%	1.28%	7.21%	1.20%	7.50%	

*As per January 2017 PCM Total Cost Report

FHL02 - Harold Stage 2 - LIRR FA- January 2017
(vert axis in $M)



APPENDIX K - ESA CORE ACCOUNTABILITY ITEMS

Table K – ESA Core Accountability Items

Project Status:		Original at FFGA	Amended FFGA	Current*	ELPEP **
Cost	Cost Estimate	$7.368B	$10.922B	$10.178B	$8.119B
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Schedule	RSD	December 31, 2013	December 31, 2023	December 2022	April 30, 2018
Total Project % Complete	Based on Invoiced Amount			68.0% (ESA Figure)	
Project Performance Rate	Based on Earned Value***			76.2% (PMOC Calculation)	

Major Issue	Status	Comments
Project Schedule	[redacted] The current Integrated Project Schedule continues to show that the remaining Harold work is now the ESA Program Critical Path. Based on the current IPS, the ESA late RSD is approximately 12.5 months before the Amended FFGA RSD.	The PMOC remains concerned about recent developments with regard to the remaining work in Harold Interlocking. • [redacted] • Amtrak's decision to take ERT Line 2 out of service first for an extended outage of one year or more will not support the current ESA planning to complete all of the remaining Harold work, including the High Speed Rail work, by 2020.
Harold Re-planning	Based on continuing issues with inadequate railroad force account support, ESA completed a Harold schedule re-sequencing in December 2014, also known as "ESA First", that advances work elements required for the new LIRR service to GCT and delays the FRA funded High Speed Rail Work beyond 2017. The 2015 Harold Re-Sequenced schedule advanced completion of ESA elements but did not achieve goals due to insufficient Amtrak force account support. The schedule was again re-evaluated in 2016 and the ESA Program Critical Path now passes through the remaining work in the Harold Interlocking.	Work in Harold Interlocking is subject to influences outside of the control of ESA. Continuing issues with the level of Amtrak force account support, for the "ESA First" schedule, has further delayed completion of the Harold Interlocking work and has forced it onto the ESA Program Critical Path. New issues include: reduced priority weekend track outages; increased demand for track foremen to provide access/protection; Amtrak Program to harden Lines 3 and 4 prior to extended outages for ERT Lines 1 and 2 beginning in 2019.

* Current Budget was approved by MTA CPOC in June 2014.

** 2010 Enterprise Level Project Execution Plan (ELPEP) reflecting medium level of risk mitigation, excluding financing cost of $1,116 million.

***76.2% is PMOC calculation of construction spending at 4Q2016 planned vs actual since re-baselining.